SONY

3-081-195-**11**(2)

DVD Recorder

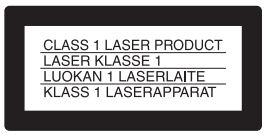
Operating Instructions

RDR-GX7

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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
The mains lead must only be changed at a qualified service shop.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

The use of optical instruments with this product will increase eye hazard. As the laser beam used in this DVD recorder is harmful to eyes, do not attempt to disassemble the cabinet.
Refer servicing to qualified personnel only.



This label is located on the laser protective housing inside the enclosure.

Notice for customers in the United Kingdom and Republic of Ireland

A moulded plug complying with BS1363 is fitted to this equipment for your safety and convenience.
Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS1362, (i.e., marked with ⓐ or ♡ mark) must be used.
If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

Precautions

- This unit operates on 220 – 240 V AC, 50/60 Hz. Check that the unit's operating voltage is identical with your local power supply.
- To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.

VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On safety

Should any solid object or liquid fall into the cabinet, unplug the recorder and have it checked by qualified personnel before operating it any further.

On power sources

- The recorder is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the recorder itself has been turned off.
- If you are not going to use the recorder for a long time, be sure to disconnect the recorder from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.

On placement

- Place the recorder in a location with adequate ventilation to prevent heat build-up in the recorder.
- Do not place the recorder on a soft surface such as a rug that might block the ventilation holes.
- Do not place the recorder in a confined space such as a bookshelf or similar unit.
- Do not place the recorder in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place the recorder in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the recorder and discs away from equipment with strong magnets, such as microwave ovens, or large loudspeakers.
- Do not place heavy objects on the recorder.

On operation

- If the recorder is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the recorder. Should this occur, the recorder may not operate properly. In this case, remove the disc and leave the recorder turned on for about half an hour until the moisture evaporates.
- When you move the recorder, take out any discs. If you don't, the disc may be damaged.

On recording

- Contents of the recording cannot be compensated if the recording or playback is not made due to a malfunction of the recorder, disc, etc.
- Make trial recordings before taking the actual recording.

On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

Copyrights

- Television programmes, films, video tapes, discs, and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization from the cable television transmitter and/or programme owner.
- This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents, other intellectual property rights owned by Macrovision Corporation, and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Copy guard function

Since the recorder has a copy guard function, programmes received through an external tuner (not supplied) may contain copy protection signals (copy guard function) and as such may not be recordable, depending on the type of signal.

Music discs encoded with copyright protection technologies

This product is designed to playback discs that conform to the Compact Disc (CD) standard.
Recently, various music discs encoded with copyright protection technologies are marketed by some record companies. Please be aware that among those discs, there are some that do not conform to the CD standard and may not be playable by this product.

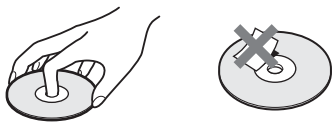
IMPORTANT NOTICE

Caution: This recorder is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Plasma Display Panels and projection televisions are especially susceptible to this.

If you have any questions or problems concerning your recorder, please consult your nearest Sony dealer.

Notes about the discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface. Dust, fingerprints, or scratches on the disc may cause it to malfunction.



- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.
- Clean the disc with a cleaning cloth. Wipe the disc from the centre out.



- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.
- Do not use the following discs.

– A disc that has a non-standard shape (e.g., card, heart).
– A disc with a label or sticker on it.
– A disc that has cellophane tape or sticker adhesive on it.

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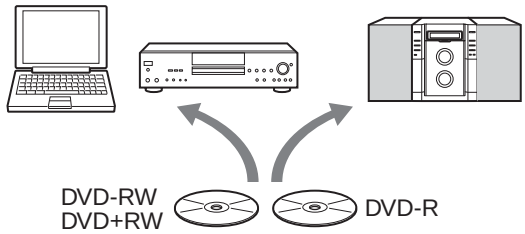
Features

This recorder can play DVDs or CDs, record on DVD-Rs, DVD-RWs or DVD+RWs, and by using a variety of editing functions, you can enjoy editing recorded programmes and other images.

Recording

Dual RW compatible *(page 20)*

The recorder is compatible with rewritable disc types, DVD-RW and DVD+RW, and the write-once type, DVD-R. These available disc types accommodate a wide range of uses, such as recording programmes and creating personal video libraries. These discs can be played back on a wide variety of other DVD equipment.



Various recording/timer recording functions *(page 20)*

In addition to the usual recording functions, such as Timer Recording, VIDEO Plus+, and PDC/VPS, Synchro Rec allows synchronized recording with a set top box or similar device. The recorder also automatically searches for available blank space on the disc after you press the Rec button. No searching is required on your part — a feature possible only with a DVD recorder.

Adjustments for both recording and playback picture *(page 30, 47)*

The recorder allows you to adjust the picture quality of input sources, such as a VCR, which can then be recorded on a DVD. For instance, if you want to create an archive of your VHS tapes, you can adjust the recording picture quality to compensate for the quality of the tapes. Various picture quality adjustments are also available for DVD-Video software playback.

Automatic naming of programme titles using Teletext* *(page 79)*

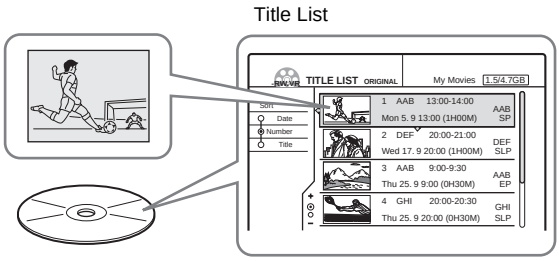
When recording programmes using this recorder, the recorder automatically takes programme label information from the Teletext service and stores it as the title name. If there is no Teletext service or if you want to change the title name, you can enter the title manually. Titles are useful when searching for a title on a disc, or for checking the name of the title currently being played.

* not available in some areas

Playback

Easy playback with the Title List menu *(page 40)*

The recorder will display all of the titles you recorded on a disc in a list display, called the "Title List." By selecting a title from the Title List menu, you can easily start playing or editing the disc. Moreover, you can have the recorder show the title's contents using thumbnail images.



TV Virtual Surround Settings, "TVS" *(page 45)*

Using only your TV's stereo speakers, the recorder is capable of reproducing dynamic surround sound from DVD-Video software's multi-channel audio signals. There are four surround modes to choose from.

Editing a disc

Playlist edit (DVD-RW in VR mode only) *(page 54)*

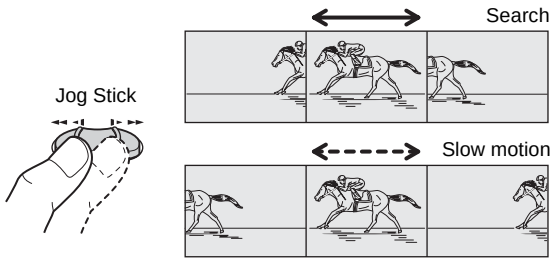
You can edit not only the recorded original title, but also perform advanced edit functions by creating a Playlist on the same disc. Since a Playlist does not require much disc space, you can create numerous Playlist titles. A Playlist edit can be redone as many times as you like, as the original title remains unchanged.

Chapter Marking function *(page 54)*

On DVD-RWs in VR mode, you can manually insert chapter marks to divide a title into chapters which will enable you to quickly find specific scenes for playback or editing. For other disc types and recording formats, the recorder automatically creates chapter marks at specified intervals while recording.

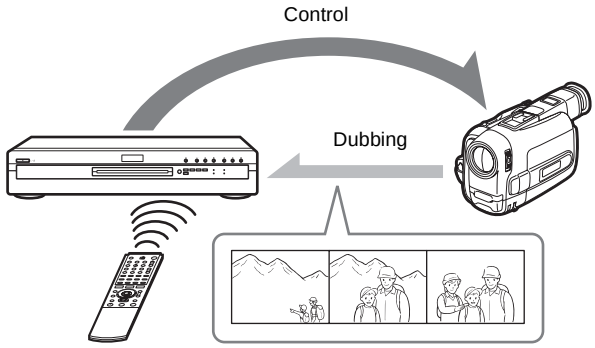
Quick Search function *(page 39)*

The remote has a Jog Stick for the recorder's main operations. You can search forward or backwards, or play at various speeds by using just your thumb. The feature helps you find scenes easily, which is especially useful for both playback and editing.



DV Edit

Only one i.LINK cable is required to transfer contents from a digital video camera to the DVD recorder. Since the recorder controls the digital video camera, dubbing and editing are easy to perform.



One Touch Dubbing function *(page 61)*

One press on the ONE TOUCH DUB button is enough to complete the procedure. The recorder controls the digital video camera from start to finish — from playing the DV/Digital8 format tape to stop and rewind. The entire tape contents are dubbed to a DVD in the process.

Program Edit *(page 62)*

This function allows you to select scenes on a DV/Digital8 format tape and save them on recordable DVDs, including non-rewritable DVD-Rs. The recorder controls the digital video camera to record the contents of a DV/Digital8 format tape to the disc as programmed. The recorder will remember which scenes you selected and saves this information as a program. You can call up a program at any time and make additional copies of the program to blank DVDs.

Advanced Program Edit *(page 64)*

This function takes advantage of a DVD's random access capabilities to enable fast and flexible editing.
The recorder copies the entire contents of a DV/Digital8 format tape to a DVD-RW in VR mode, whereupon the contents are automatically divided into chapters. The chapters are displayed as scenes in a scene list where you can instantly delete or rearrange the scenes at will. The recorder remembers which scenes you selected, and saves this information as a program. You can call up a program at any time and make additional copies of the program to a blank DVD.

Auto Scene Chaptering (DVD-RW in VR mode only) *(page 62)*

While copying a DV/Digital8 format tape to a DVD-RW, the recorder automatically inserts chapter marks at each point where you started recording on your digital video camera. This enables you to quickly find the scenes you want during playback and editing.

About This Manual

Instructions in this manual describe the controls on the remote. You can also use the controls on the recorder if they have the same or similar names as those on the remote.
The meanings of the icons used in this manual are described below:

Icon	Meaning
DVD	Functions available for DVD VIDEOs or DVD+Rs
-RW VR	Functions available for DVD-RWs formatted in VR mode on this recorder
-RW VIDEO	Functions available for DVD-RWs formatted in Video mode on this recorder
+RW	Functions available for DVD+RWs
-R	Functions available for DVD-Rs
CD	Functions available for music CDs or CD-Rs/CD-RWs in music CD format

Notes

- The on-screen display illustrations used in this manual may not match the graphics displayed on your TV screen.
- The explanations regarding discs in this manual refer to discs created on this recorder. The explanations do not apply to discs that are created on other recorders and played back on this recorder.

DVD Recorder Basics

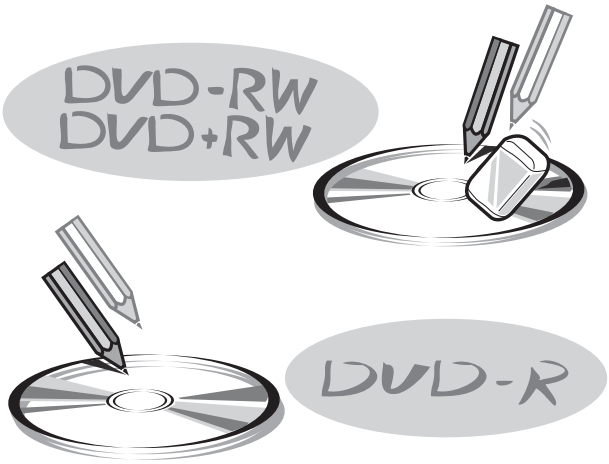
"What can I expect from DVD recording?" is a natural question for anyone new to the experience. This section explains the basic steps involved with DVD recording.

Step 1: Select the disc type

Unlike a video tape which is sold by length, such as 60 min. or 120 min., recordable DVDs are sold by type. Select the disc type by following the chart on the back cover, as each type has different features.
This recorder can record on the following type of discs.

When you want to record repeatedly on the same disc, or when you want to edit the disc after recording, select either the rewritable DVD-RW or DVD+RW type disc.

When you want to save recordings without any alteration, a non-rewritable DVD-R can be your choice.



Note
There are other differences besides just being rewritable/non-rewritable.
See "Quick Guide to DVD Disc Types" on the back cover to select a disc most suitable for your needs.

Step 2: Format the disc to start recording

Insert the disc in the recorder. Unlike a VCR, the recorder automatically starts formatting when an unused disc is inserted. This is necessary to prepare the disc for recording.

When using a DVD-RW
This type of disc can be formatted in either DVD Video format (Video mode) or DVD Video Recording format (VR mode). Video mode discs can be played back on a variety of other DVD equipment.VR mode discs allow for more varied editing.

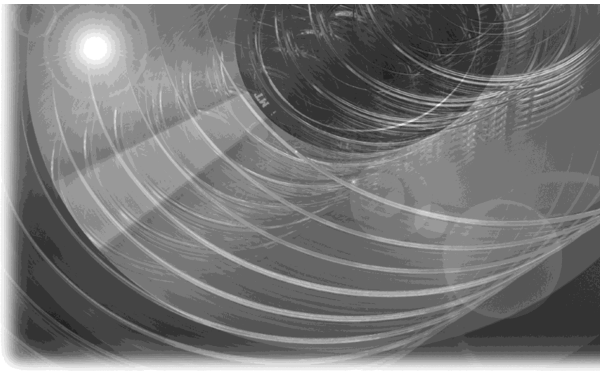
When using a DVD+RW
These discs will be formatted in DVD+RW Video format. This type of disc can be played back on a variety of other DVD equipment.

When using a DVD-R
These discs will be formatted in DVD-Video format. This type of disc can be played back on a variety of other DVD equipment.

Notes
- You cannot mix two formats in one DVD-RW.
- You can change a DVD-RW's format to the other format. However, the disc's contents will be lost when reformatting.
- Not all discs can be played on other DVD equipment.

When formatting is complete, you are ready to record on the disc.





Step 3: Digital Recording

Record a programme. When using the timer, you'll find familiar, convenient features as found on conventional VCRs, such as ShowView/VIDEO Plus+ and PDC/VPS. You can also dub and edit the contents of connected video equipment such as a digital video camera.

SHOWVIEW®

VIDEOPlus+®

SMARTLINK

i.LINK (DV)

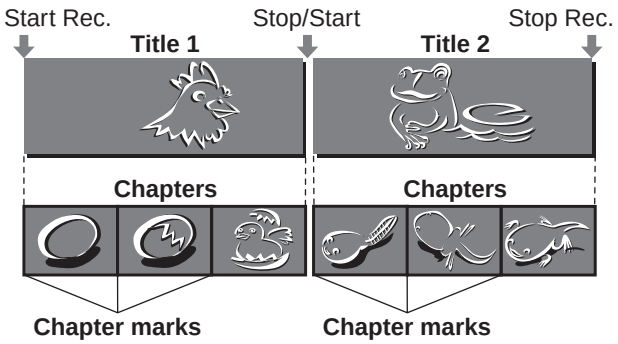
Step 4: Playing the recorded contents

You can select the title you want to play from a displayed menu, and immediately start playback. Recorded contents are more accessible on a disc than on a tape, the procedure is simple, and unlike conventional VCRs, no rewinding is necessary!

What are titles and chapters?

DVD contents consist of sections, called titles, and smaller sub-sections called chapters.
On this recorder, a title is created between the points where you start and stop a recording. Chapters are created automatically at specified intervals, or can be created manually (DVD-RWs in VR mode only).

A recorded disc contains title(s), and each title contains chapter(s)



Go to the next page.

➡*continued*

Step 5: Editing the recorded disc

You will find editing discs a lot easier than a conventional tape, and the recorder offers numerous edit functions, possible only with DVDs.

Quick and easy edits on the displayed menu

Editing is performed by simply selecting titles and scenes from the displayed menus.

Protection of individual titles

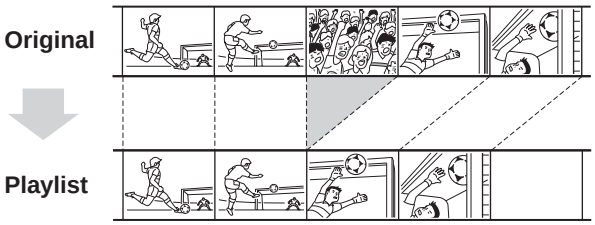
With conventional VCRs, you had to protect an entire tape to save the recordings from erasure or alteration. This recorder allows you to individually protect recorded titles (except for Playlist titles).

Edit and save on a single disc - Playlist edit (DVD-RWs in VR mode only)

To edit a conventional tape without affecting the original recording, you had to connect another VCR, copy the master tape using the two VCRs and one more tape, and start editing the copied tape.

With this recorder, you can create a Playlist (playback information) on the same disc, and edit the Playlist without changing the original recording(s). A Playlist does not take up much disc space, and all you need is one recorder and one disc.

Example: You have recorded a few football games on a DVD-RW in VR mode. You want to save the original recording, but you also want to create a digest by putting the goal scenes together. In this case, you can create a Playlist by selecting just the goal scenes, leaving the original recording as it is.



You've got your own DVD!



Playing on other DVD equipment

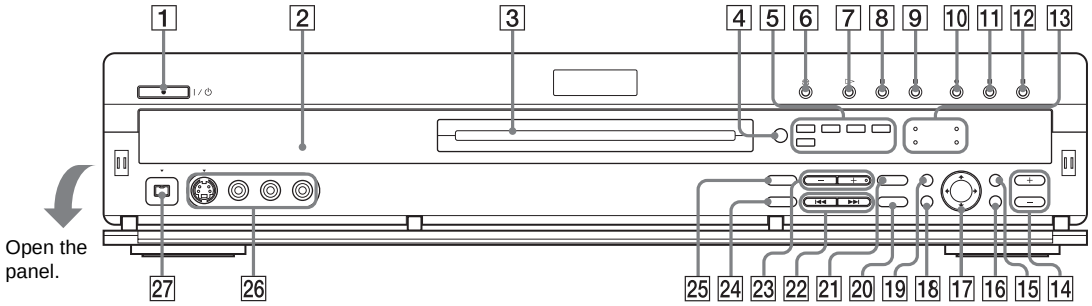
You can play your DVD on other equipment. In order to do this, you need to finalize the disc. Make sure that you have finished all your editing and recording on the disc before finalizing.

Guide to Parts and Controls

For more information, see the pages in parentheses.

Front panel

Buttons on the recorder have the same function as the buttons on the remote if they have the same or similar names.



1 **I/⏻ (on/standby) button/ indicator *(23)***
Turns the recorder on and off. Lights up in green when the power is on.

2 **Front panel display *(14, 44)***
Displays the playing status, title/chapter/time, etc.

3 **Disc tray *(23)***
Opens to accept a disc.

4 **(remote sensor)**
Accepts the remote control signal.

5 **Disc type indicators**
Lights up to indicate the disc/ format type of the current disc.

6 **⏏ (open/close) button *(23)***
Opens or closes the disc tray.

7 **▷ (play) button/indicator *(37)***
Plays a disc.

8 **II (pause) button/indicator *(39)***
Pauses playing a disc.

9 **■ (stop) button *(37)***
Stops playing a disc.

10 **● REC button/indicator *(23)***
Starts recording.

11 **II REC PAUSE button/indicator *(23)***
Pauses recording.

12 **■ REC STOP button *(23)***
Stops recording.

13 **TIMER REC indicator *(25)***
Lights up when a timer recording is set.

SYNCHRO REC indicator *(31)*
Lights up when the Synchro Rec function is set to on.

FINALIZED indicator *(34)*
Lights up if an inserted disc has been finalized.

SMARTLINK indicator
Lights up when a connected SMARTLINK compliant device, such as a TV, is turned on.

14 **ZOOM +/– buttons *(15)***
Switches the information displayed in the Title List menu.

15 **CURSOR MODE button *(16)***
Switches the cursor/page mode in the Title List, etc.

16 **TOOL button *(16)***
Displays the Tool menu.

17 **←/↑/↓/→/ENTER button *(16)***
Selects items or settings.

18 **RETURN button *(16)***
Returns to the previously selected display, etc.

19 **SYSTEM MENU button *(15)***
Displays the System Menu on the TV screen.

20 **ONE TOUCH DUB button *(61)***
Records the contents of a DV/ Digital8 format tape with a single touch of the button.

21 **REC MODE button *(23)***
Selects the recording mode.

22 **I◄◄ /►►I (previous/next) buttons *(39)***
Goes to the next title/chapter/ track, or goes back to the previous title/chapter/track.

23 **PROGRAM +/– buttons *(23)***
Selects the programme position or input line.

24 **TITLE LIST button *(15, 40, 51)***
Displays the Title List menu on the TV screen.

25 **INPUT SELECT button *(23, 59, 71)***
Selects equipment connected to the line inputs.

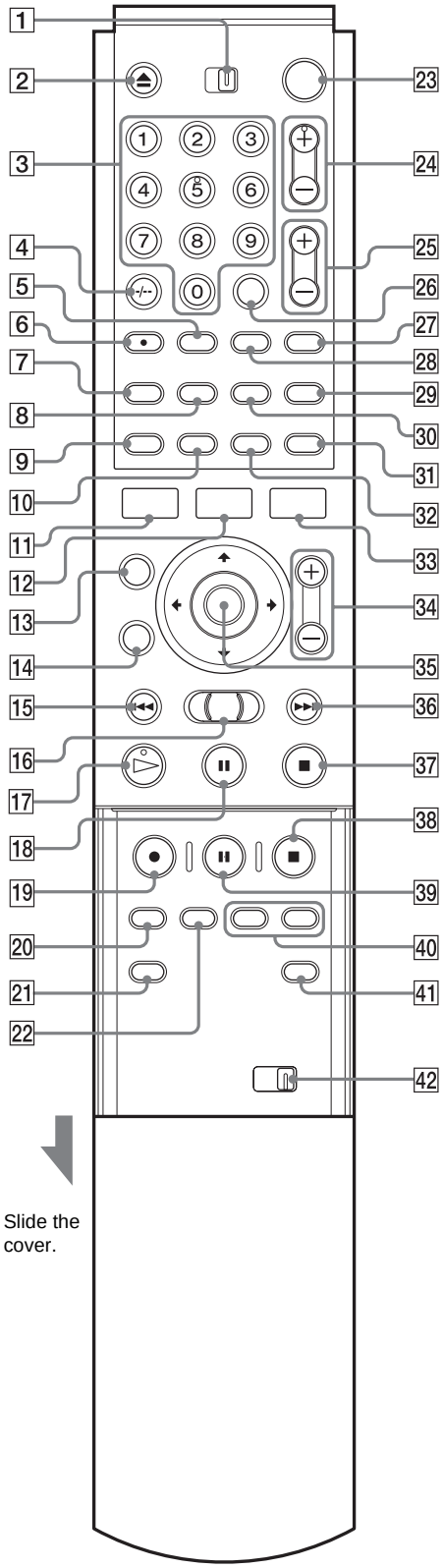
26 **LINE 2 IN (S VIDEO/VIDEO/ AUDIO L/R) jacks *(71)***
Connects external equipment.

27 **DV IN jack *(59)***
Connects digital equipment with a DV jack.

→*continued*

Remote

Buttons on the remote have the same function as the buttons on the recorder if they have the same or similar names.



1 **TV/DVD switch**
Switches the remote control to TV or DVD.

2 **⏏ (open/close) button *(23)***
Opens or closes the disc tray. Note that it may take a few seconds for the disc tray to open after you have recorded or edited a disc.

3 **Number buttons *(23, 29)***
Select a number such as a programme number or a title number.
The number 5 button has a tactile dot.*

4 **CLEAR/-/-- (ten digit) button *(29)***
CLEAR: Cancels an entered number when used with this recorder.
-/-- (ten digit): Used to enter a digit greater than nine when used with your TV (*see "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings"*).

5 **(subtitle) button *(47)***
Changes the subtitles while playing a disc.

6 **(audio) button *(44)***
Changes the sound while playing a disc.
The button has a tactile dot.*

7 **TIMER button *(25, 29)***
Displays the Timer programming menu on the TV screen.

8 **TOP MENU button *(38)***
Displays the disc's menu on the TV screen.

9 **DISPLAY button *(24, 43)***
Displays disc information or playing/recording status on the TV screen.

10 **TIME/TEXT button *(43)***
Displays the time information of the disc.

11 **SYSTEM MENU button *(15)***
Displays the System Menu on the TV screen.

12 **TITLE LIST button *(15, 40, 51)***
Displays the Title List menu on the TV screen.

13 **CURSOR MODE button *(16)***
Switches the cursor/page mode in the Title List, etc.

14 **RETURN button *(16)***
Returns to the previously selected display, etc.

15 **⏮ (previous) button *(39)***
Goes back to the previous title/chapter/track.

16 **◀◀ ◀❚/❚▶ ▶▶ (search) Jog Stick *(39)***
Searches fast-forward or reverses a scene (while playing a disc), or plays a disc in slow motion or frame by frame (in the pause mode).

17 **▷ (play) button *(37)***
Plays a disc.
The button has a tactile dot.*

18 **❚❚ (pause) button *(39)***
Pauses playing a disc.

19 **● REC button *(23)***
Starts recording.

20 **REC MODE button *(23)***
Selects the recording mode.

21 **INPUT SELECT button *(23, 59, 71)***
Selects equipment connected to the line inputs.

22 **SYNCHRO REC button *(31)***
Synchronizes the recorder and the timer recording set on the connected external equipment.

23 **I/⏻ (on/standby) button *(23)***
Turns the recorder on and off.

24 **PROG (programme) +/– buttons *(23)***
Selects the programme position or input line.

25 **(volume) +/– buttons**
Adjusts the volume of your TV or AV amplifier (receiver).

26 **SET button *(18)***
Use to enter the number selected with the number buttons 3.

27 **(TV/video) button**
Switches your TV's input source.

28 **(angle) button *(46)***
Changes the angles when playing a DVD VIDEO.

29 **(wide mode) button**
Changes the wide mode settings of your TV (*see "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings"*).

30 **MENU button *(38)***
Displays the disc's menu on the TV screen.

31 **TV/DVD button *(23)***
Switches the input source between the TV and the recorder (*see "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings"*).

32 **REPLAY button *(39)***
Replays the current scene.

33 **TOOL button *(16)***
Displays the Tool menu.

34 **ZOOM +/– buttons *(15)***
Switches the information displayed in the Title List menu.

35 **←/↑/↓/→/(ENTER) button *(16)***
Selects items or settings.

36 **▶▶I (next) button *(39)***
Goes to the next title/chapter/track.

37 **■ (stop) button *(37)***
Stops playing a disc.

38 **■ REC STOP button *(23)***
Stops recording.

39 **II REC PAUSE button *(23)***
Pauses recording.

40 **CHAPTER MARK/ERASE buttons *(54)***
Inserts/erases a chapter mark in the recorded title.

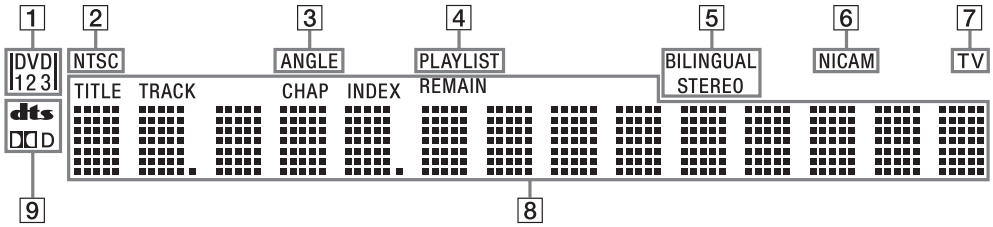
41 **SUR (surround) button *(45)***
Selects the surround mode.

42 **COMMAND MODE switch (DVD 1,2,3)**
Switches the command mode for this recorder. Match the switch to the same command mode set in the Options Setup (*page 82*). (*See "Preparing the Remote" in the separate booklet, "Hookups and Settings."*)

* Use the tactile dot as a reference when operating the recorder.

→*continued*

Front panel display



1 **Command mode indicator *(82)***
Indicates the selected remote command mode (*see "Preparing the Remote" in the separate booklet, "Hookups and Settings"*).

2 **NTSC indicator**
Lights up when the recorder outputs the signal in NTSC format.

3 **ANGLE indicator *(46)***
Lights up when you can change the angle.

4 **PLAYLIST indicator *(16)***
Lights up when the Playlist is selected.

5 **STEREO/BILINGUAL indicators *(24)***
Lights up when receiving a stereo/bilingual programme.

6 **NICAM indicator *(24)***
Lights up when receiving a NICAM signal.

7 **TV indicator**
Lights up when the TV/DVD button on the remote is pressed and the signals from the aerial are sent directly to your TV *(see "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings").*

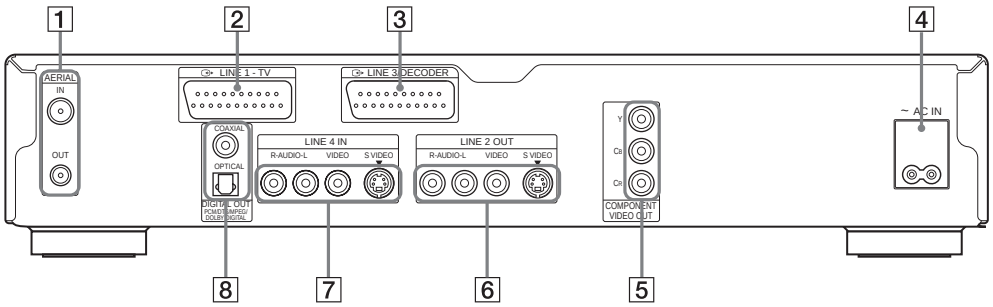
8 **Displays the following *(44)*:**
- Playing time/remaining time
- Current title/chapter/track/index number
- Recording time
- Clock
- Programme position
- TV Direct Rec indication *(24)*: "TV" appears in the right most two digits.

9 **Audio signal indicators *(45)***
Lights up when playing Dolby Digital or DTS sound tracks.

Hint
You can turn off the front panel display by setting "Dimmer" to "Off" in Options Setup *(page 82)*.

Rear panel

For more information regarding the jacks, *see the separate booklet, "Hookups and Settings."*



1 **AERIAL IN/OUT jacks**
Connects aerial cables.

2 **LINE 1 -TV jack**
Connects your TV using a SCART (EURO AV) cord.

3 **LINE 3/DECODER jack *(31)***
Connects external equipment such as a VCR or decoder using a SCART (EURO AV) cord.

4 **AC IN terminal**
Connects the mains lead.

5 **COMPONENT VIDEO OUT (Y, C_B, C_R) jacks**
Connects equipment having component video input jacks.

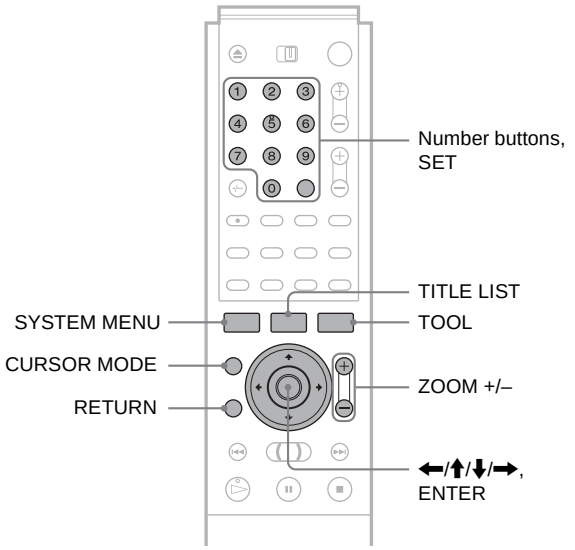
6 **LINE 2 OUT (S VIDEO/VIDEO/ AUDIO L/R) jacks**
Connects the input of external equipment using an audio/video or S VIDEO cord.

7 **LINE 4 IN (S VIDEO/VIDEO/ AUDIO L/R) jacks *(71)***
Connects the output of external equipment using an audio/video or S VIDEO cord.

8 **DIGITAL OUT (COAXIAL/ OPTICAL) jacks**
Connects an amplifier (receiver) having a digital input jack.

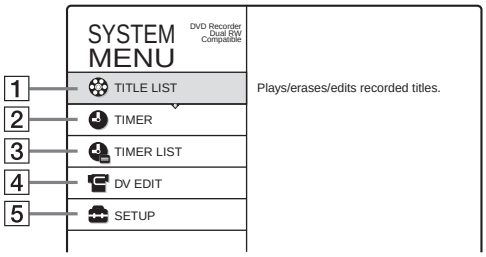
Guide to Displays

The recorder uses the following four types of displays for most operations: System Menu, Title List, Tool, and Sub-menu.
It also has a Disc Information display for checking the status of the inserted disc, and an on-screen keyboard that enables you to label a title or disc.



System Menu

The System Menu appears when you press SYSTEM MENU, and provides entries to all of the recorder's main functions.



1 TITLE LIST:
Turns on the Title List menu, which shows recorded titles on the disc *(page 40, 51)*.

2 TIMER:
Allows you to set a new timer recording setting *(page 25)*.

3 TIMER LIST:
Turns on the Timer List menu, which allows you to check, change, or cancel timer settings *(page 28)*.

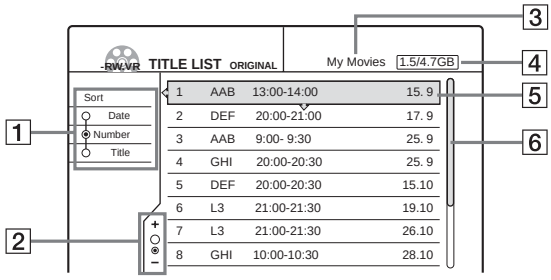
4 DV EDIT:
Activates the DV Edit function, which allows you to record and edit the contents of a DV/Digital8 format tape *(page 62)*.

5 SETUP:
Turns on the Setup Display, which allows you to set up the recorder to suit your preferences *(page 74)*.

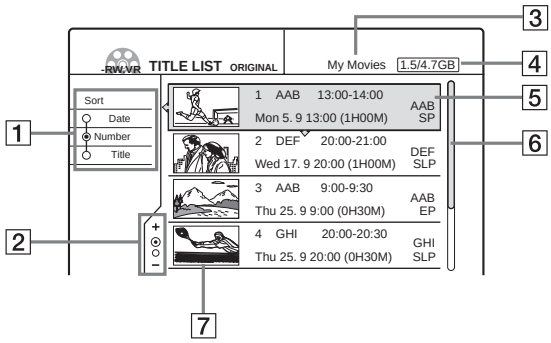
Title List

The recorder uses list displays for some operations. The most frequently used is the Title List menu.
The Title List menu appears when you press TITLE LIST or when you select "TITLE LIST" from the System Menu, and displays all the titles on the disc.
To show the list in greater details (zoom), press ZOOM+. To return to the previous display, press ZOOM–.

Standard Title List



"Zoomed" Title List



1 Sort buttons:
Sorts the title order *(page 41)*.

2 Zooming indicator:
Shows the current zoom status *(page 41)*.

3 Disc name (*page 33*)

4 Disc space (remainder/total)

5 Title information:
Displays the title number, title name, and recording date (*page 41*).

6 Scroll bar:
Appears when all the titles do not fit on the list. To view the hidden titles, press ↑/↓.

7 Title's thumbnail picture (*page 41*)

Notes

- The Title List does not appear when you play DVD VIDEOs, CDs, CD-Rs, or CD-RWs.
- The Title List may not appear for discs created on other DVD recorders.

→*continued*

About the types of Title List menus

The appearance of the Title List menu differs according to the disc type and recording format.

◆For DVD+RWs, DVD-Rs, DVD-RWs (Video mode):
The Title List menu appears and displays the titles on the disc.

◆For DVD-RWs (VR mode):
The Title List (Original) or Title List (Playlist) menu appears and displays the Original or Playlist titles on the disc. The "PLAYLIST" indicator lights up on the front panel display when the Title List (Playlist) menu is selected.

To switch the Title List menu for a DVD-RW (VR mode)

The recorder displays either the Original or Playlist Title List. Follow the steps below.

1 **Press TITLE LIST.**
The Title List menu appears.

2 **Press TOOL.**
The Tool menu appears.

3 **Press ↑/↓ to select either "Original" or "Playlist," whichever is not displayed, then press ENTER.**
The display switches to the selected Title List menu.

To scroll the list display by page (Page mode)

Press CURSOR MODE while the list display is turned on. The display enters Page mode. Each time you press ↑/↓, the entire Title List changes to the next/previous page of titles.
To return to the Cursor mode, press CURSOR MODE again.

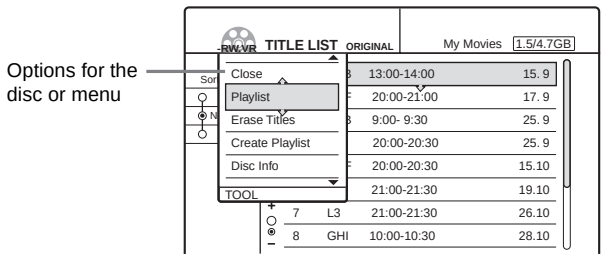
Note

When you turn off the list display, the Page mode is cancelled.

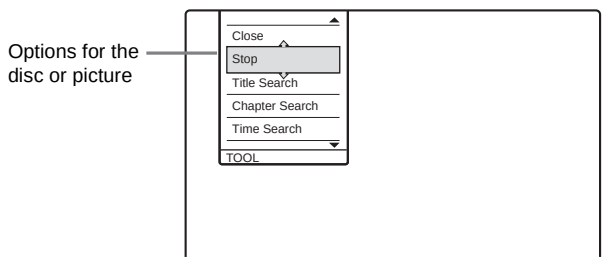
Tool

The Tool menu appears when you press TOOL, and displays options applicable to the entire disc or recorder.

Example 1: When you press TOOL while the Title List menu is turned on.



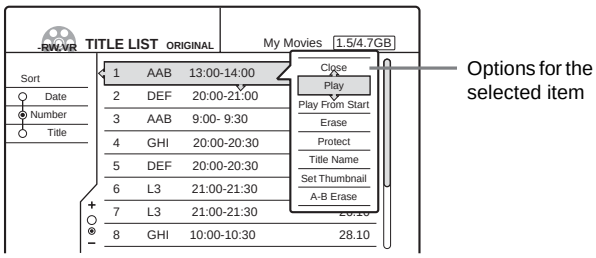
Example 2: When you press TOOL while a DVD is playing.



Sub-menu

The sub-menu appears when you select an item from the displayed list menu and press ENTER. The sub-menu displays options applicable only to the selected item.

Example: The Title List menu



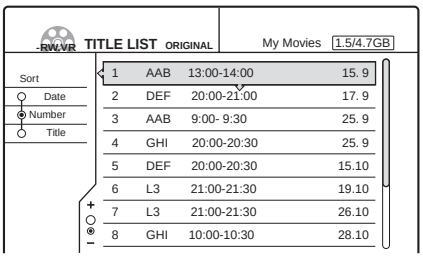
How to use the displays

The recorder's overall operation is simple. Generally, commands are displayed in the menu, and can be selected by pressing only ←/↑/↓/→, and ENTER. Once you know the common procedure, you will find the recorder easy to operate.

1 **Press SYSTEM MENU.**
The System Menu appears with entries to the main functions.

2 **Press ↑/↓ to select a function, then press ENTER.**
The display for the selected function appears.

Example: When "TITLE LIST" is selected.



◆ Using the Tool menu

Use the Tool menu to display options for the entire disc.

① **Press TOOL.**
The Tool menu appears.

② **Press ↑/↓ to select the option, then press ENTER.**

◆ Using the sub-menu

The sub-menu displays options for a specific title.

① **Press ↑/↓ to select the title on the list, then press ENTER.**
The sub-menu appears.

② **Press ↑/↓ to select the option, then press ENTER.**

3 **Press RETURN repeatedly to turn off the list display.**

To return to the previous display

Press RETURN.

List of the Tool/sub-menu options

The options vary depending on the disc type or status of the recorder. Only the options available in the situation appear in the menus. For details, see the pages in parentheses.

◆Tool

A-B Erase	Erases a portion in the title being played *(page 53)*
Audio Settings	Adjusts settings for the playback audio quality *(page 48)*
Chapter Search	Searches for a chapter by chapter number *(page 42)*
Close	Turns off the Tool menu
Combine	Combines multiple titles *(page 58)*
Create Playlist	Creates a Playlist title *(page 54)*
Disc Info	Displays the disc information *(page 18)*
Disc Map	Indicates the available disc space *(page 22)*
Divide	Divides the title being played *(page 57)*
DV Audio Input	Selects the audio input signal for the DV jack *(page 59)*
Erase	Erases the title being played *(page 52)*
Erase Titles	Erases multiple titles at a time *(page 52)*
Extend Rec	Extends the recording duration time during a timer recording *(page 27)*
Line Audio Input	Selects the audio input signal for the LINE IN jacks *(page 71)*
Original	Displays the Title List (Original) menu *(page 16)*
PDC/VPS Scan On/Off	Turns on/off the PDC/VPS channel scan function *(page 26)*
Play	Starts playback *(page 37)*
Play From Start	Plays from the beginning of the title/ track *(page 40)*
Playlist	Displays the Title List (Playlist) menu *(page 16)*
Protect	Sets protection for the title being played so that it cannot be erased or edited *(page 51)*
Rec Mode Adjust	Turns on/off the Rec Mode Adjust function *(page 27)*
Rec Settings	Adjusts settings for recording *(page 30)*
Rec Stop	Stops recording *(page 23)*
Record	Starts recording *(page 23)*
Reset Resume	Restarts playback from the beginning of the disc *(page 40)*
Set Thumbnail	Selects a scene to be used for the Title List thumbnail *(page 41)*
Stop	Stops playback/dubbing (*page 38, 62)*
Time Search	Searches by playback time *(page 42)*
Timer	Sets the timer for recording *(page 25)*
Title Name	Changes the name of the title being played *(page 51)*
Title Search	Searches for a title by title number *(page 42)*
Track Search	Searches for a track by track number *(page 42)*
Video Settings	Adjusts settings for the playback picture quality *(page 47)*

◆Sub-menu

A-B Erase	Erases a portion in a selected title *(page 53)*
Capture	Collects scenes from the selected original title or other Playlist titles to create a new Playlist *(page 54)*
Capture All	Captures an entire title as a scene *(page 54)*
Change IN	Resets the IN point *(page 54)*
Change OUT	Resets the OUT point (*page 54)*
Check Overlap	Checks the overlapped timer settings *(page 28)*
Check Scenes	Displays all of the collected scenes *(page 54)*
Close	Turns off the sub-menu
Divide	Divides the selected title *(page 57)*
DV Dubbing	Starts Copy Dubbing *(page 69)*
Edit	Displays the Scene List menu *(page 67)*
Erase	Erases the selected title/cancels the timer setting/erases the selected scene/ cancels the scene selection/erases a program from the DV Edit List
Extend Rec	Extends the recording duration time *(page 27)*
Make a Playlist	Creates a Playlist title on the disc from the DV Edit List in the recorder *(page 67)*
Modify	Changes the timer setting *(page 28)*
Move	Change the scene order (*page 54)*/ changes the Playlist title order *(page 57)*
Play	Starts playback *(page 40)*
Play From Start	Plays from the beginning of the selected title *(page 40)*
Preview	Previews the selected scenes *(page 54)*

➡*continued*

Protect	Sets protection for the selected title *(page 51)*
Rec Stop	Stops recording *(page 23)*
Rename	Changes the program name (DV Edit) *(page 70)*
Set Thumbnail	Selects a scene for the Title List thumbnail *(page 41)*
Title Name	Changes the name of the selected title *(page 51)*

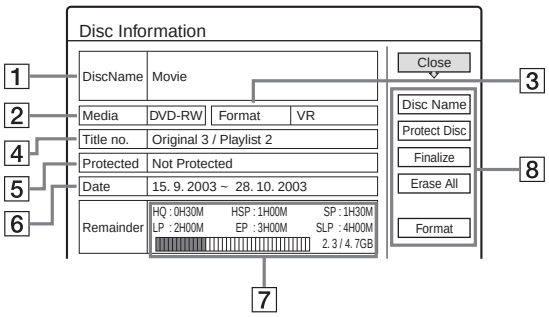
Disc information display (Disc Info)

You can check the status of the inserted disc.

1 Press TOOL while the disc is in the recorder.
The Tool menu appears.

2 Press ↑/↓ to select "Disc Info," then press ENTER.
The Disc Information display appears.
Items in the display differ depending on the disc type or recording format.

Example: DVD-RW (VR mode)



1 Disc Name

2 Media:
Disc type

3 Format:
Recording format type (DVD-RW only)

4 Title no.:
Total number of titles

5 Protected:
Indicates whether protection is set (DVD-RW in VR mode only)

6 Date:
Dates when the oldest and the most recent titles are recorded

7 Continuous Rem. Time/Remainder:
- The longest continuous recording time in each of the recording modes
- Disc space bar
- Remaining disc space/total disc space (approximate)

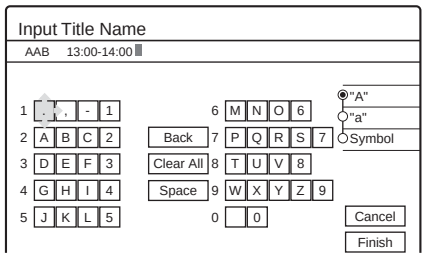
8 Disc setting buttons
- Disc Name: Labels the disc (*page 33*)
- Protect Disc: Protects the disc (DVD-RW in VR mode only) (*page 33*)
- Finalize: Finalizes the disc/Creates a DVD menu (DVD+RW only) (*page 34*)
- Unfinalize: Unfinalizes the disc if it has already been finalized (DVD-RW in VR mode only) (*page 34*)
- Erase All: Erases all titles on the disc (*page 34*)
- Format: Reformats the disc (*page 35*)

How to enter characters

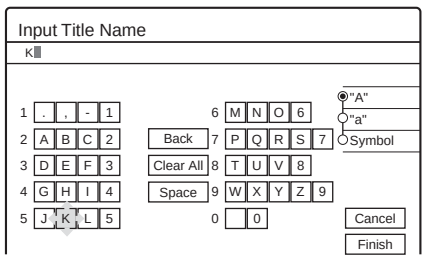
You can label a title, disc, program, or channel by entering characters. You can enter up to 64 characters for a title/disc/program name, but the actual number of characters displayed in the menus such as the Title List will vary. When the display for entering characters appears, follow the steps below.

1 Press ←/↑/↓/→ to select the type of characters, "A" (uppercase), "a" (lower case), or "Symbol," then press ENTER.
The characters of the selected type are displayed.

Example: Input Title Name



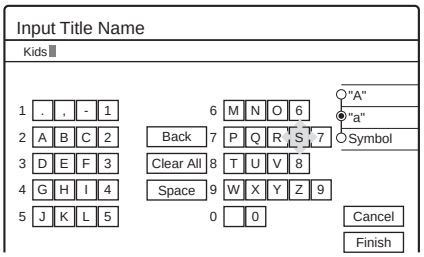
2 Press ←/↑/↓/→ to select a character you want to enter, then press ENTER.
The selected character appears at the top of the display.



To enter a letter with an accent mark, select an accent followed by the letter.
Example: Select " ´ " and then "a" to enter "á."

To insert a space between the characters, select "Space."

3 Repeat steps 1 and 2 to enter all the characters for the name.



◆ **To erase a character**

① **Press ←/↑/↓/→ to move the cursor to the input row.**

② **Press ←/→ to move the cursor to the right of the character you want to erase.**

③ **Press ←/↑/↓/→ to select "Back," then press ENTER.**

◆ **To insert a character**

① **Press ←/↑/↓/→ to move the cursor to the input row.**

② **Press ←/→ to move the cursor to the right of the point where you want to insert a character.**

③ **Press ←/↑/↓/→ to select the character you want to insert, then press ENTER.**

◆ **To erase all the characters**
Press ←/↑/↓/→ to select "Clear All," then press ENTER.

4 **Press ←/↑/↓/→ to select "Finish," then press ENTER.**
To cancel the setting, select "Cancel."

To use the number buttons

You can also use the number buttons to enter characters.

1 **In step 2 above, press the number buttons repeatedly to select the character you want to enter.**
Example:
Press the number 3 button once to enter "D."
Press the number 3 button three times to enter "F."

2 **Select the next character, or press SET.**

3 **Repeat steps 1 and 2 to enter all of the characters for the name.**

4 **Press ←/↑/↓/→ to select "Finish," then press ENTER.**

Recording/ Timer Recording

This section covers the basics of DVD recording, and the available methods for setting the timer.

- *Before Recording* *page 20*
- *Recording TV programmes* -RW VR -RW VIDEO +RW -R *page 23*
- *Timer Recording* -RW VR -RW VIDEO +RW -R *page 25*
- *Adjusting the Recording Picture Quality and Size* -RW VR -RW VIDEO +RW -R . . *page 30*
- *Recording from External Equipment with a Timer (Synchro Rec)* -RW VR -RW VIDEO +RW -R *page 31*
- *Labelling, Protecting, or Finalizing the Disc* -RW VR -RW VIDEO +RW -R . . . *page 33*

Before Recording

This recorder can record on various discs. Before you record, read the following and select the disc type according to your needs.

Recordable discs

This recorder can record on the following discs.

◆Disc type

DVD-RW*1 Ver. 1.1 Ver. 1.1 with CPRM*2	DVD RW
DVD+RW*1	RW DVD+ReWritable
DVD-R*1 Ver. 2.0	DVD R R4.7

*1 "DVD-RW," "DVD+RW," and "DVD-R" are trademarks.
*2 CPRM (Content Protection for Recordable Media) is a coding technology that protects copyrights for images.

DVD-RWs and DVD+RWs are rewritable. DVD-Rs are non-rewritable.
The recorder cannot record on the following discs:
- 8 cm discs
- DVD+R
- DVD-RW (Ver 1.0)
- DVD-RAM
- CD-R/CD-RW

Notes

- The following type of high-speed discs can be used for recording: up to 2×-speed DVD-RWs (Revision 1.0), up to 4×-speed DVD-Rs (Revision 1.0), or up to 4×-speed DVD+RWs. Note that high-speed discs will not record at higher speed. You cannot record on the disc if it is not 1×-speed compatible.
- Use a disc with CPRM to record Copy-Once TV programmes *(page 21)*.
- It is recommended that you use discs with "For Video" printed on their packing.
- You cannot add new recordings to DVD-Rs and DVD-RWs (Video mode) that contain recordings made on other DVD recorders.
- In some cases, you may not be able to add new recordings to DVD+RWs that contain recordings made on other DVD recorders. If you do add a new recording, note that this recorder will rewrite the DVD menu. If the disc contains PC data unrecognizable by this recorder, the data will be erased.

About recording formats

When you insert an unused disc, the recorder automatically starts formatting. Since available functions differ depending on the disc type, select the disc that best suits your needs using the chart below.
You can preset the format for unused DVD-RWs in Options Setup. When "Format Disc" is set to either "VR" or "Video" *(page 82)*, the recorder starts formatting in the selected mode without asking for confirmation. Select "Selectable" if you want to select the mode each time you insert an unused DVD-RW.

Differences between the disc types

See pages in parentheses for details.

Disc type	Characteristics
+RW -RW VIDEO -R	– Records only one sound track of a bilingual programme *(page 24, 82)* – Automatically creates chapters at specified intervals *(page 79)* – Simple editing (erasing titles/changing title name, *page 51*)
-RW VR	– Records bilingual programmes *(page 24)* – Creates chapters manually or automatically *(page 54)* – Various editing options using a created Playlist *(page 54)* – Records Copy-Once programmes provided that the disc has CPRM

Notes

- To play a recorded disc on other DVD equipment, you need to finalize the disc. For details on finalizing, *see page 34*.
- You cannot mix the two formats on one DVD-RW. To change the disc's format, reformat the disc *(page 35)*. Note that the disc's contents will be erased after reformatting.

Recording mode

While the recorder is stopped, you can select one of six recording modes by pressing REC MODE repeatedly for the desired recording time and picture quality. The picture quality generally improves as the recording time decreases.

Recording mode	Recording time (minute)
HQ	60
HSP	90
SP (Standard mode)	120
LP	180
EP	240
SLP	360

Notes

- The recording times are an estimate and actual times may differ.
- Situations below may cause slight inaccuracies with the recording time.

– Recording a programme with poor reception, or a programme or video source of low picture quality
– Recording on a disc that has already been edited
– Recording only a still picture or just sound

Unrecordable pictures

Pictures with copy protection cannot be recorded on this recorder.
When the recorder receives a copy guard signal while recording, the recorder stops recording and a message appears on your TV screen.

About pictures with Copy Control Signals

Broadcasts that contain Copy Control Signals may have one of the following three signal types, Copy-Free, Copy-Once, and Copy-Never. This recorder limits the recording according to copy protection signal as shown below.
If you want to record a Copy-Once programme, use a DVD-RW with CPRM in VR mode.

◆Available recording options

	Copy-Free	Copy-Once	Copy-Never
DVD-RW (Ver.1.1)	○	—	—
DVD-RW (Ver.1.1 with CPRM in VR mode)	○	○*	—
DVD+RW	○	—	—
DVD-R (Ver.2.0)	○	—	—

* The recorded disc can be played only on CPRM compatible equipment.

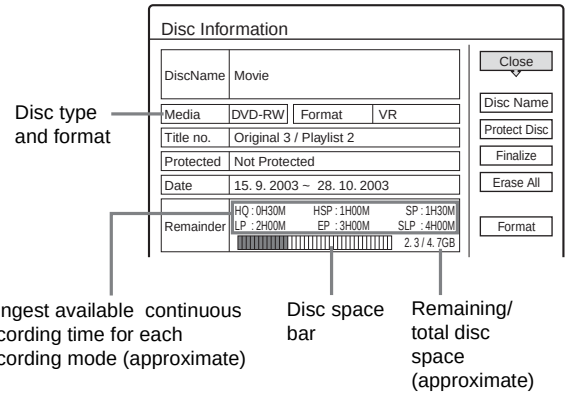
Checking the available disc space (Disc Info)

When recording on a used disc, make sure that there is enough disc space for recording. With DVD-RWs or DVD+RWs, you can free up disc space by erasing titles.

1 Press TOOL while the disc is in the recorder.
The Tool menu appears.

2 Press ↑/↓ to select "Disc Info," then press ENTER.
The Disc Information display appears.
Items in the display differ depending on the disc type or recording format. Note that the remaining disc space indicator is an estimate and actual available space may differ.

Example: DVD-RW (VR mode)

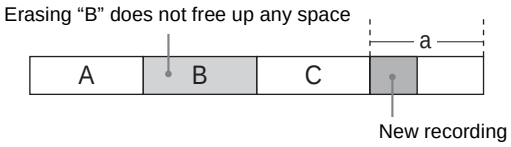


→*continued*

–R

◆How programmes are recorded on the disc

A new programme is recorded on the last space [a] only. Check that the remaining disc space is large enough for the recording.

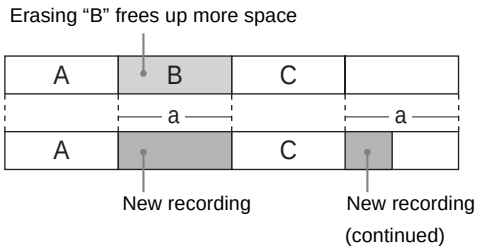


You cannot free up disc space on a DVD-R. Erasing a title will only hide the title name in the Title List menu. The erased titles will still take up space on the disc.

–RW VR

◆How programmes are recorded on the disc

A programme is recorded on the free disc space [a]. Check that the total remaining disc space is large enough for recording.



◆To free up disc space

You can free up disc space by erasing titles. The original title used for a Playlist cannot be erased.

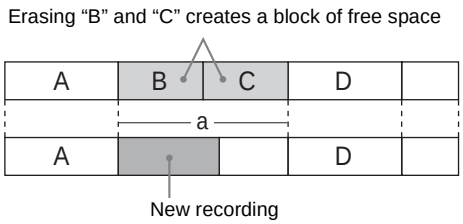
To erase a title, *see page 52*.

To erase multiple titles, *see page 52*.

–RW VIDEO **+RW**

◆How programmes are recorded on the disc

The recorder searches for the largest block of space [a] and records there. Check that there is a continuous free block large enough for the recording. If not, the recording will stop.



◆To check or free up disc space

For DVD-RWs (Video mode) and DVD+RWs only, you can check free disc space and title location, and also erase titles using the Disc Map display *(see below)*.

Hint

You can erase all the disc’s titles other than protected titles at one time *(see page 34)*.

Notes

- When you erase titles, the title order may change depending on the disc type or format.
- After finalizing, you cannot record further on a DVD-RW (Video mode) or DVD-R.

To free up disc space using the Disc Map display (DVD-RW in Video mode, DVD+RW only)

The Disc Map display in the Tool menu allows you to check the disc status and erase titles on the disc.

1 Press TITLE LIST while the disc is in the recorder.

2 Press TOOL.

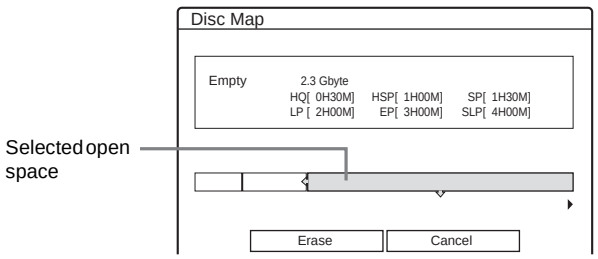
3 Press ↑/↓ to select “Disc Map” from the Tool menu, then press ENTER.

The Disc Map display appears.

◆ To check free disc space

Press ←/→ to select an open space.

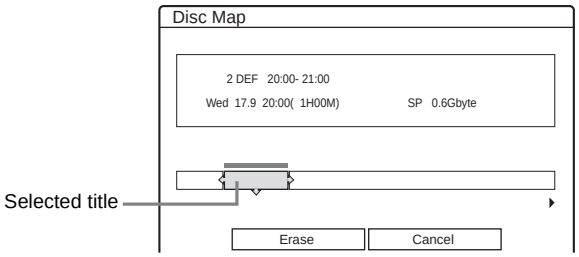
The remaining space and the longest recording time in each of the recording modes appears.



◆ To free up disc space by erasing a title using the Disc Map

① Press ←/→ to select the title you want to erase, then press ENTER.

The title is selected.



To cancel the selection, press ENTER again.

Repeat step ① to erase multiple titles.

② Press ↓ to select “Erase,” then press ENTER.

The display asks for confirmation.

③ Press ←/→ to select “OK.”

All of the selected titles are erased, freeing up disc space. If you want to change your selection, select “Change.”

④ Press RETURN repeatedly to turn off the Title List menu.

Note

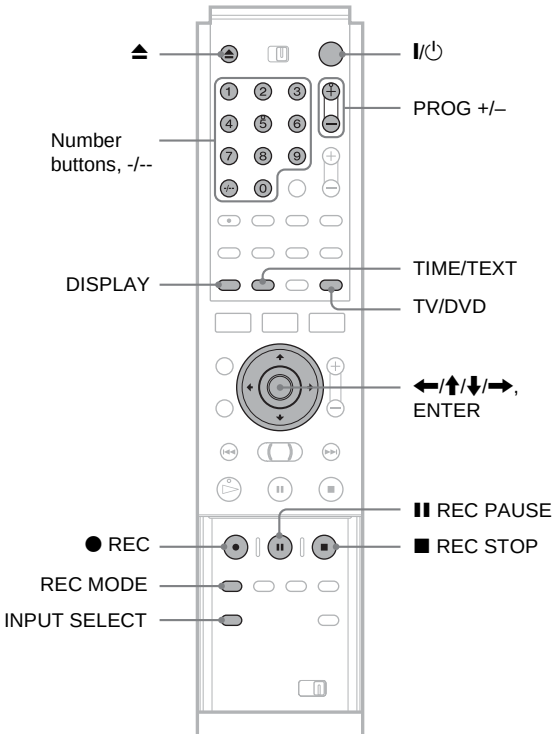
You cannot erase a title during playback or recording.

Recording TV programmes

-RW VR -RW VIDEO +RW -R

Before you start…

- Check that the disc has enough available space for the recording *(page 21)*.
- When recording a bilingual programme on a DVD+RW, DVD-R, or DVD-RW (Video mode), you cannot record both sound tracks. Select the sound track, main or sub using the Options Setup Display (*page 82)*.
- Adjust the recording picture quality and picture size if necessary (*page 30)*.



1 **Press I/⏻.**

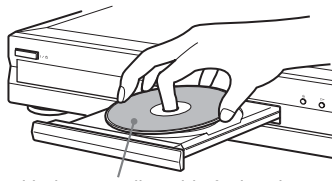
The recorder turns on and the power indicator on the front panel lights up in green.

2 **Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.**

◆ **When using an amplifier (receiver)**

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

3 **Press ⏏, and place a recordable disc on the disc tray.**



With the recording side facing down

4 **Press ⏏ to close the disc tray.**

Wait until "LOAD" disappears from the front panel display.
If you use an unused DVD, formatting starts automatically.
When using an unused DVD-RW, select the recording format, VR or Video.

5 **Press PROG +/– to select the programme position or input source you want to record.**

6 **Press REC MODE repeatedly to select the recording mode.**

Each time you press the button, the display changes on the TV screen as follows:

HQ → HSP → SP → LP → EP → SLP

For more details of the recording mode, *see page 21*.

7 **Press ● REC.**

Recording starts.
Recording continues until you stop the recording or the disc is full.

To stop recording

Press ■ REC STOP. Note that it may take a few seconds for recording to stop.

To pause recording

Press II REC PAUSE. To restart recording, press the button again.

To watch another TV programme while recording

Set the TV to TV input using the TV/DVD button and select the programme you want to watch. *See "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings."*

About the Teletext function

Some broadcasts systems ensure a Teletext service* in which the complete programmes and their data (title, date, channel, recording start time etc.) are stored day by day. When recording a programme, the recorder automatically takes the programme name from the Teletext pages and stores it as the title name. For details, *see "TV Guide Page"* (*page 79)*.
Note that the Teletext information will not appear on your TV screen. To view the Teletext information on your TV screen, press TV/DVD on the remote to switch the input source to your TV.

* not available in some areas

→continued

Hints

- You can also start and stop recording using the Tool menu. Press TOOL and select “Record” or “Rec Stop,” then press ENTER.
- You can stop recording from the Title List menu as well. Select the title you are currently recording and press ENTER. Then select “Rec Stop” from the sub-menu.
- If you do not want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on.
- To select a programme position, you can also use the number buttons in step 5 above.
- If you record from equipment connected to the recorder’s input jack, you can also use the INPUT SELECT button to select “L1,” “L2,” “L3,” “L4,” or “DV” in step 5. For details, *see “Recording from connected equipment” (page 71)*.
- You can also select the recording mode using the Tool menu (*page 30)*.

Notes

- After pressing ● REC, it may take a short while to start recording.
- While recording or during recording pause, you cannot change the recording mode.
- If there is a power failure, the programme you are recording may be erased.
- You cannot watch a PAY-TV/Canal Plus programme while recording another PAY-TV/Canal Plus programme.

To record what you are watching on your TV (TV Direct Rec)

If you use the SMARTLINK connection, you can easily record what you are watching on the TV.

Press ● REC while a disc is in the recorder.
The recorder automatically turns on and starts recording what you are watching on the TV. “TV” appears in the front panel display.

To turn off this function, set “TV Direct Rec” to “Off” in Features Setup *(page 79)*.

Notes

- You cannot record what you are watching using this method when the recorder is in the following modes: pause, tuner preset, Easy Setup, playback, and recording. You also cannot record on a protected disc.
- Do not turn off the TV or change the TV programme position during TV Direct Rec.

Using the Quick Timer function

You can set the recorder to record in 30 minute increments by pressing just the ● REC button.

Press ● REC repeatedly to set the duration time.
Each press advances the time in 30 minute increments. The maximum duration is six hours.

0:30 → 1:00 - - - - → 5:30 → 6:00 → (normal recording)

The time counter decreases minute by minute to 0:00, then the recorder stops recording (power does not turn off). Even if you turn off the recorder during recording, the recorder continues to record until the time counter runs out.

To cancel the Quick Timer

Press ● REC repeatedly until the counter appears in the front panel display. The recorder returns to normal recording mode.

Recording stereo and bilingual programmes

The recorder automatically receives and records stereo and bilingual programmes based on the ZWEITON system or the NICAM system.
A DVD-RW (VR mode) can record both main and sub sounds. You can switch between main and sub when playing the disc.
A DVD+RW, DVD-R, or DVD-RW (Video mode) can record only one sound track (main or sub) at a time. Select the sound track using the Setup Display before recording starts. Set “Bilingual Recording” to “Main” (default) or “Sub” in Options Setup (*page 82)*.

◆ZWEITON (German stereo) system
When a stereo or bilingual ZWEITON based programme is received, “STEREO” or “BILINGUAL” appears on the front panel display.

◆NICAM system
When a stereo or bilingual NICAM based programme is received, “NICAM” appears on the front panel display.
To record a NICAM programme, be sure to set “Audio” of “Channel Setting” in “Settings” to “NICAM” (default). If the sound is not clear when listening to NICAM broadcasts, set “Audio” to “Standard.” *See “Presetting channels manually” in the separate booklet, “Hookups and Settings.”*

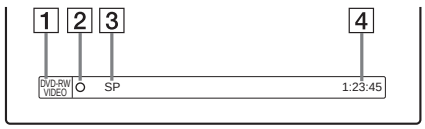
Hint

You can select the audio (main or sub) while recording bilingual programmes using the (audio) button. This does not affect the recorded sound.

Checking the disc status while recording

You can check the recording information such as recording time or disc type.

1 Press DISPLAY twice during recording.
The recording information appears.



1 Disc type/format
2 Recording status
3 Recording mode
4 Recording time

2 Press DISPLAY to turn off the display.

Creating chapters in a title

The recorder can automatically divide a recording (a title) into chapters by inserting chapter marks at 6 or 15 minute intervals during recording. Select the interval, “6Min” (default) or “15Min” in “Auto Chapter” of Features Setup (*page 79)*.

Hint

You can make chapters manually when playing DVD-RWs (VR mode). For details, *see page 54*.

Notes

- If “Auto Chapter” is set to “Off” in Features Setup, no chapters are automatically created.
- A message will appear when no more chapter marks can be added. In this case, you may not be able to record or edit the disc.

Timer Recording

You can set the timer for a total of eight programmes up to one month in advance.

There are two setting methods: the manual setting and VIDEO Plus+ setting.

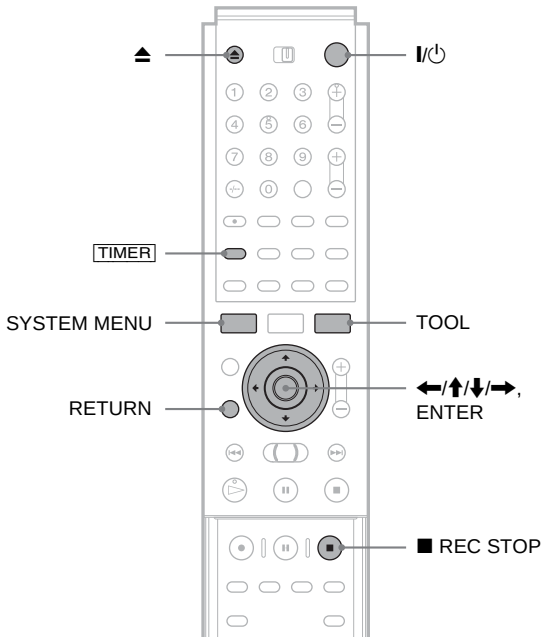
- Standard: Set the date, time, and programme position of the programme manually.
- VIDEO Plus+: Enter the PlusCode number designated for each TV programme *(page 29)*.

Before you start…

- Check that the disc has enough available space for the recording *(page 21)*.
- When recording a bilingual programme on a DVD+RW, DVD-R, or DVD-RW (Video mode), you cannot record both sound tracks. Select the sound track, main or sub using the Options Setup Display (*page 82)*.
- Adjust the recording picture quality and picture size if necessary (*page 30)*.

Setting the timer manually (Standard)

-RW VR -RW VIDEO +RW -R



1 Press I/⏻.

2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.

◆ **When using an amplifier (receiver)**

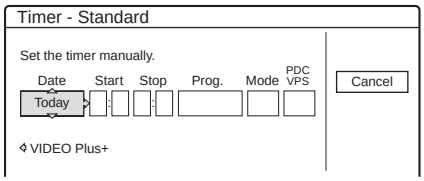
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

→*continued*

3 Press ⏏, and place a recordable disc on the disc tray.

4 Press ⏏ to close the disc tray.
Wait until "LOAD" disappears from the front panel display.
If you use an unused DVD, formatting starts automatically.
When using an unused DVD-RW, select the recording format, VR or Video.

5 Press TIMER.
The Timer programming (Standard) menu appears.



If the Timer programming (VIDEO Plus+) menu appears, press ← to switch the display.

6 Set the following items using ←/↑/↓/→.

① **Press ↑/↓ to set the date, then press →.**
Each time you press ↑/↓, the item changes as follows.

Today ↔ Tomorrow ↔ …… ↔ Tue 28.10 (1 month later) ↔ Sun (every Sunday) ↔ …… ↔ Sat (every Saturday) ↔ Mon-Fri (Monday to Friday) ↔ Mon-Sat (Monday to Saturday) ↔ Sun-Sat (Sunday to Saturday) ↔ Today

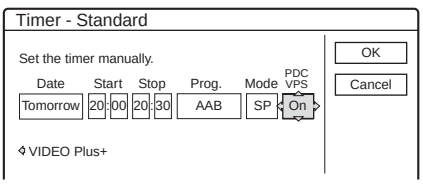
② **Press ↑/↓ to set the start time, then press →.**

③ **Press ↑/↓ to set the stop time, then press →.**

④ **Press ↑/↓ to set the programme position, then press →.**
When you set the timer for recording from connected equipment, select "Line1," "Line2," "Line3," or "Line4."

⑤ **Press ↑/↓ to select the recording mode (HQ, HSP, SP, LP, EP, or SLP), then press →.**

⑥ **Press ↑/↓ to set the PDC/VPS function "On" or "Off."**
See "About the PDC/VPS function" below for more information.



◆ **If you make a mistake**
Press ←/→ to select the item you want to change.

◆ **To exit without saving the current setting**
Press ←/↑/↓/→ to select "Cancel," then press ENTER.

7 Press ←/↑/↓/→ to select "OK," then press ENTER.
The Timer List menu appears. The TIMER REC indicator lights up on the front panel and the recorder is ready to start recording.

8 Press RETURN to turn off the Timer List, or press TIMER and repeat from step 5 to enter additional timer settings.
Unlike a VCR, there is no need to turn off the recorder before the timer recording starts.

To stop recording during timer recording

Press ■ REC STOP.

To confirm, change, or cancel timer recording

See "Checking/changing/cancelling timer settings (Timer List)" (page 28).

Hints

- For recording over the next day, leave the starting date setting as it is, and enter the ending time in the setting. The date will automatically change to the next day.
- You can also display the timer programming menu by:
 – selecting "TIMER" from the System Menu.
 – selecting "Timer" from the Tool menu while the Timer List menu is displayed (*page 17*).
- You can also use the recorder even when the recorder stands by for recording. To remind you of the timer setting, a message appears on your TV screen five minutes before the timer recording starts.

Note

Check that the clock is correctly set before setting the timer recording. If not, the timer recording cannot be made.
To record a satellite programme, turn on the satellite tuner and select the satellite programme you want to record. Leave the satellite tuner turned on until the recorder finishes recording. If you connect equipment with a timer function, you can use the Synchro Rec function (*page 31*).

About the PDC/VPS function

PDC/VPS signals are transmitted with TV programmes in some broadcast systems. These signals ensure that timer recordings are made regardless of any broadcast delays, early starts, or broadcast interruptions.
To use the PDC/VPS function, set "PDC/VPS" to "On" in step 6 above.
When you turn on this function, the recorder starts scanning the channel before the timer recording starts. If you are watching TV when scanning starts, a message will appear on the TV screen. If you want to watch TV, switch to your TV's tuner or turn off the PDC/VPS channel scan function.

◆ **To turn off the PDC/VPS channel scan function**

① **Press TOOL.**

② **Press ↑/↓ to select "PDC/VPS Scan Off."**

To ensure that the PDC/VPS function works properly, turn off the recorder before the timer recording starts. This will automatically turn on the PDC/VPS channel scan function again.

Notes

- The beginning of some recordings may not be made when using the PDC/VPS function.
- Select "PDC/VPS Scan Off" when dubbing or editing a DV/Digital8 format tape. When finished, select "PDC/VPS Scan On" so that the timer recordings will be made.

To display the timer programming menu automatically with one button (One Touch Timer)

If you use the SMART LINK connection, you can easily display the timer programming menu by pressing just the TIMER button.

Press TIMER while a disc is in the recorder.

The TV and recorder turn on and the TV's input is switched to the recorder. The Timer programming menu appears.

Note

When you use this function, leave the TV on, or in the standby mode.

Rec Mode Adjust

If there is not enough available disc space for the recording, the recorder automatically selects the recording mode to enable the programme to be recorded. This function is normally set to on.

◆To cancel the function

① Press TOOL while the Timer List is displayed.

② Press ↑/↓ to select "Rec Mode Adjust," then press ENTER.

③ Press ←/→ to select "Off," then press ENTER.

Notes

- If "DISC FULL" appears on the front panel display, change the disc, or make available space for the recording (DVD-RW/DVD+RW only).
- This function only works with a timer recording and the PDC/VPS function set to off. It does not function with Quick Timer or Synchro Rec.

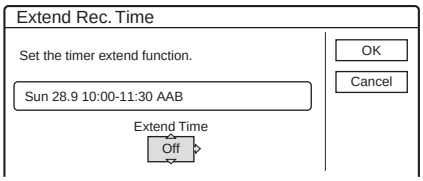
To extend the recording duration time

You can extend the recording duration while recording.

1 Press TOOL during recording.

2 Press ↑/↓ to select "Extend Rec," then press ENTER.

The following display appears.



3 Press ↑/↓ to select the duration time, then press ENTER.

You can set the duration in increments of 10 minutes, up to 60 minutes.

4 Press ←/↑/↓/→ to select "OK," then press ENTER.

Hint

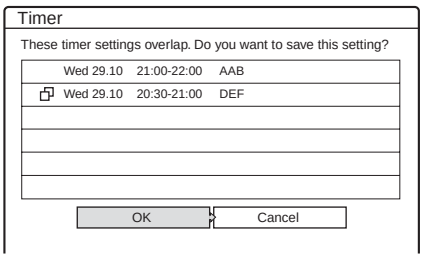
You can also extend the recording duration time using "Extend Rec" in the sub-menu of the Timer List.

Note

You cannot extend the recording duration time when "PDC/VPS" is set to "On."

If the timer settings overlap

The following display appears.

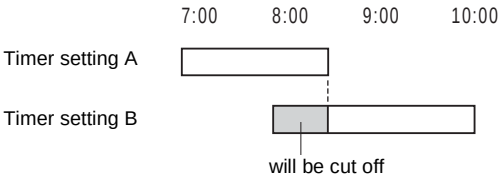


To store the setting, press ←/→ to select "OK," then press ENTER.

To cancel or change the setting, select "Cancel." When the Timer List menu appears, change or cancel the setting (*page 28*).

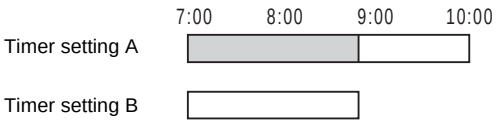
◆When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished.



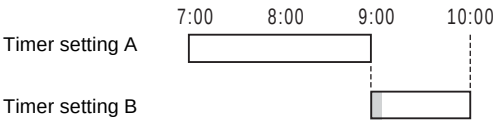
◆When the recordings start at the same time

The programme that is set last has priority. In this example, timer setting B is set after A, so the first part of timer setting A will not be recorded.



◆When the end time of one recording and the start time of another are the same

After finishing the previous recording, the other recording may be delayed.



Note

When "PDC/VPS" is set to "On" for one or more timer recordings, the start times may change in the event of a broadcast delay or early start.

→*continued*

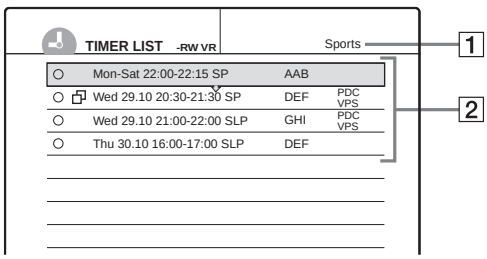
Checking/changing/cancelling timer settings (Timer List)

-RW VR -RW VIDEO +RW -R

You can check, change, or cancel timer settings using the Timer List menu.

1 Press SYSTEM MENU.
The System Menu appears.

2 Press ↑/↓ to select "TIMER LIST," then press ENTER.
The Timer List menu appears.



1 Disc name
To enter a disc name, *see "Labelling a disc (Disc Name)"* (*page 33*).

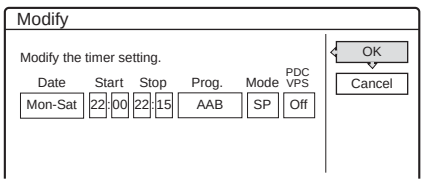
2 Timer information:
Displays the recording date, time, recording mode, etc.
- ❒ indicates the overlapped setting.
- ○ (red) indicates the setting currently being recorded.
- ● (grey) indicates that the setting cannot be recorded in the selected recording mode.

3 Press ↑/↓ to select the setting you want to check/change/cancel, then press ENTER.
The sub-menu appears.

4 Press ↑/↓ to select one of the following items.
- Modify
- Erase
- Check Overlap

◆ **To modify the setting**

① **Select "Modify," then press ENTER.**
The display for modifying appears.

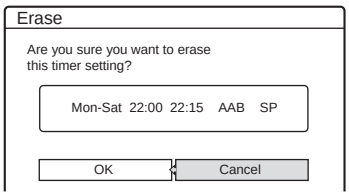


② **Press ←/↑/↓/→ to select the item and change the setting.**
To undo the change, press ←/↑/↓/→ to select "Cancel," then press ENTER or RETURN.
To change another setting, repeat step ②.

③ **Press ←/↑/↓/→ to select "OK," then press ENTER.**

◆ **To erase the setting**

① **Select "Erase," then press ENTER.**
The display asks for confirmation.

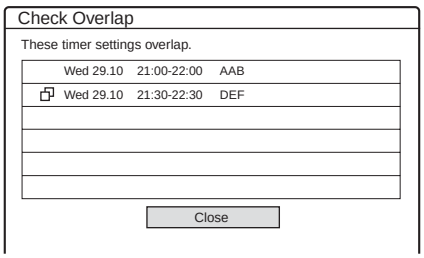


If you do not want to erase the setting, select "Cancel," then press ENTER or RETURN.

② **Press ←/→ to select "OK," then press ENTER.**

◆ **To check for overlapped settings**

① **Select "Check Overlap," then press ENTER.**
The display for confirming overlapped settings appears.



② **Select "Close."**
To change or cancel the setting, press RETURN to return to the Timer List menu, and repeat steps **3** and **4** above.

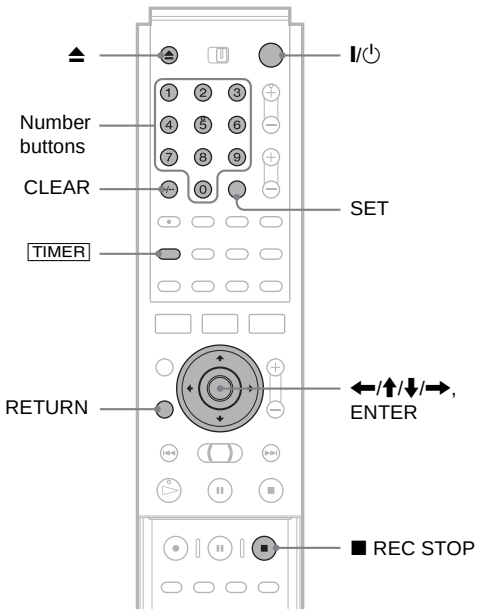
5 Press RETURN to turn off the Timer List.

Hint
While recording, you cannot modify the timer setting for the current recording but extend the recording duration time (*page 27*).

Recording TV programmes using the VIDEO Plus+ system

-RW VR -RW VIDEO +RW -R

The VIDEO Plus+ system is a feature that simplifies setting timer recordings. Just enter the PlusCode number listed in the TV programme guide. The date, time, and programme position of that programme are set automatically.
Check that the channel is correctly set in “Channel Setting” in “Settings” (*page 75*).



1 **Press I/⏻.**

2 **Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.**

◆ **When using an amplifier (receiver)**

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

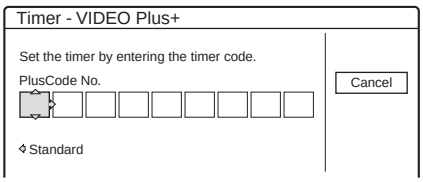
3 **Press ⏏, and place a recordable disc on the disc tray.**

4 **Press ⏏ to close the disc tray.**

Wait until “LOAD” disappears from the front panel display.
If you use an unused DVD, formatting starts automatically.
When using an unused DVD-RW, select the recording format, VR or Video.

5 **Press TIMER.**

The Timer programming (VIDEO Plus+) menu appears.



If the Timer programming (Standard) menu appears, press ← to switch the display.

6 **Press the number buttons to enter the PlusCode number, then press SET.**

◆ **If you make a mistake**

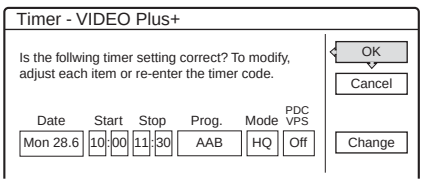
Press CLEAR and re-enter the correct number.

◆ **To cancel the setting**

Press ↑/↓ to select “Cancel,” then press ENTER.

7 **Press ↑/↓ to select “OK,” then press ENTER.**

The date, start and stop times, programme position or station name, recording mode, and PDC/VPS setting appears. For details about the PDC/VPS function, *see page 26*.



◆ **If you want to change the setting**

① **Press ←/→ to select the item you want to change.**

② **Press ↑/↓ to change the setting.**

To cancel the setting, select “Cancel.”
To re-enter the PlusCode number, select “Change.”

8 **Press ←/↑/↓/→ to select “OK,” then press ENTER.**

The TIMER REC indicator lights up on the front panel, and the recorder is ready to start recording.

9 **Press RETURN to turn off the display.**

To record from a decoder or other source, leave the connected equipment turned on.

To stop recording during timer recording

Press ■ REC STOP.

If the timer settings overlap

See page 27.

To confirm, change, or cancel timer recording

See “Checking/changing/cancelling timer settings (Timer List)” (page 28).

→*continued*

Hints

- The Rec Mode Adjust function also works with this timer setting method (*page 27*).
- You can extend the recording duration time during recording (*page 27*).
- You can also display the timer programming menu by:
 – selecting “TIMER” from the System Menu.
 – selecting “Timer” from the Tool menu while the Timer List menu is displayed (*page 17*).

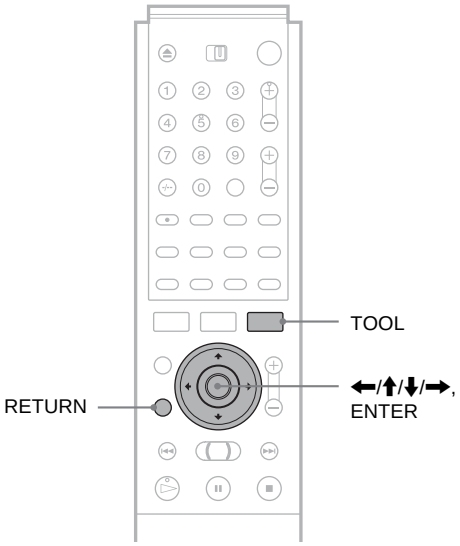
Notes

- Check the clock set before setting the timer recording. If not, the timer recording cannot be made.
- You can also use the recorder even when the recorder stands by for recording. To remind you of the timer setting, a message appears on your TV screen five minutes before the timer recording starts.

Adjusting the Recording Picture Quality and Size

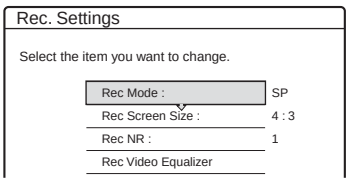
-RW VR -RW VIDEO +RW −R

You can adjust the recording picture quality and picture size.



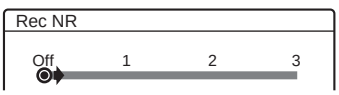
1 Press TOOL before recording starts.
The Tool menu appears.

2 Press ↑/↓ to select “Rec Settings,” then press ENTER.
The following display appears.



3 Press ↑/↓ to select the item you want to adjust, then press ENTER.
The adjustment display appears.

Example: Rec NR



◆ Rec Mode

Selects the recording mode for the desired recording time and picture quality. For more information, *see "Recording mode" (page 21)*.

- HQ
- HSP
- SP (default)
- LP
- EP
- SLP

◆ Rec Screen Size

Sets the picture size of the programme to be recorded

- 4:3 (default): Sets the picture size to 4:3.
- 16:9: Sets the picture size to 16:9 (wide mode).

This function works with DVD-Rs and DVD-RWs (Video mode) when the recording mode is set to HQ, HSP, or SP. For all other recording modes, the screen size is fixed at "4:3."
For DVD-RWs (VR mode), the actual picture size is recorded regardless of the setting. For instance, if a 16:9 size picture is received, the disc records the picture as 16:9 even if "Rec Screen Size" is set to "4:3."
For DVD+RWs, the screen size is fixed at "4:3."

◆ Rec NR (noise reduction)

Reduces noise contained in the video signal.

◆ Rec Video Equalizer

Adjusts the picture in greater detail.
Press ↑/↓ to select the item you want to adjust, then press ENTER.

- Contrast: Changes the contrast.
- Brightness: Changes the overall brightness.
- Color: Makes the colours deeper or lighter.

4 Adjust the setting using ←/↑/↓/→, then press ENTER.

The larger the number, the greater the effect. The default setting is underlined.

Items	Settings
Rec NR	Off 1 ~ 3
Rec Video Equalizer	
Contrast	–3 ~ 0 ~ 3
Brightness	–3 ~ 0 ~ 3
Color	–3 ~ 0 ~ 3

5 Repeat steps 3 and 4 to adjust any other items.

6 Press RETURN to turn off the display.

Note

The adjustments made here are for the recorder and cannot be saved for individual titles.

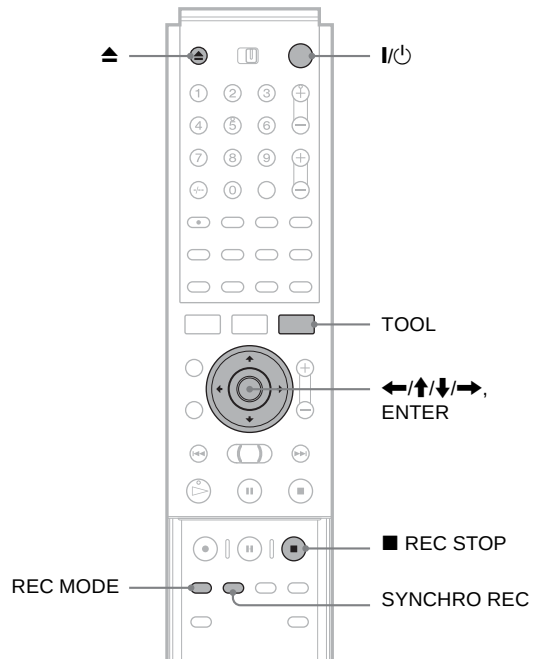
Recording from External Equipment with a Timer (Synchro Rec)

–RW VR –RW VIDEO +RW –R

You can set the recorder to automatically record programmes from connected equipment that has a timer function (such as a satellite tuner). Connect the equipment to the LINE 3/DECODER jack of the recorder *(see the separate booklet, "Hookups and Settings")*.
When the connected equipment turns on, the recorder starts recording a programme from the LINE 3/DECODER jack.

Before you start…

- Check that the disc has enough available space for the recording *(page 21)*.
- When recording a bilingual programme on a DVD+RW, DVD-R, or DVD-RW (Video mode), you cannot record both sound tracks. Select the sound track, main or sub using the Options Setup Display (*page 82*).
- Adjust the recording picture quality and picture size if necessary (*page 30*).



1 Press I/⏻.

2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.

◆ When using an amplifier (receiver)

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear the sound from the recorder.

3 Press ⏏, and place a recordable disc on the disc tray.

→continued

4 Press ⏏ to close the disc tray.

Wait until "LOAD" disappears from the front panel display.

If you use an unused DVD, formatting starts automatically.

When using an unused DVD-RW, select the recording format, VR or Video.

5 Select the line input audio when recording a bilingual programme.

① Press TOOL.

② Press ↑/↓ to select "Line Audio Input," then press ENTER.

③ Press ↑/↓ to select "Bilingual," then press ENTER.

6 Press REC MODE repeatedly to select the recording mode, HQ, HSP, SP, LP, EP, or SLP.

7 Set the timer on the connected equipment to the time of the programme you want to record, and turn it off.

8 Press SYNCHRO REC.

The SYNCHRO REC indicator lights up on the front panel. The recorder is ready to start Synchro-Recording.

The recorder automatically starts recording when it receives an input signal from the connected equipment. The recorder stops recording when the connected equipment turns off.

To stop recording

Press ■ REC STOP.

To cancel Synchro Rec

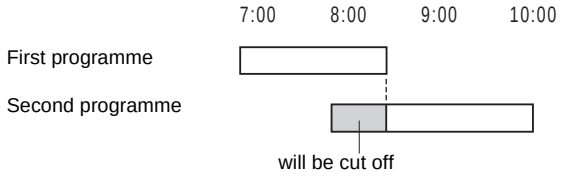
Press SYNCHRO REC. The SYNCHRO REC indicator turns off.

Notes

- The Synchro Rec function does not work with some tuners. For details, refer to the tuner's operating instructions.
- While Synchro-Recording, other operations such as normal recording cannot be done.
- To use the connected equipment while the recorder is standing by for Synchro-Recording, cancel Synchro-Recording by pressing SYNCHRO REC. Be sure to turn off the connected equipment and press SYNCHRO REC to reset Synchro-Recording before the timer recording starts.
- The recorder starts recording only after detecting the video signal from the connected equipment. The beginning of the programme may not be recorded regardless of whether or not the recorder's power is on or off.
- Any programme that contains a Copy-Never copy guard signal cannot be recorded. When you record a programme that contains a Copy-Once signal, use a DVD-RW (Ver. 1.1 with CPRM) in VR mode for recording. For details, *see "Unrecordable pictures" (page 21)*.
- When using the Synchro Rec function, do not use the VCR control function on connected equipment.
- The Synchro Rec function cannot be used with a decoder.

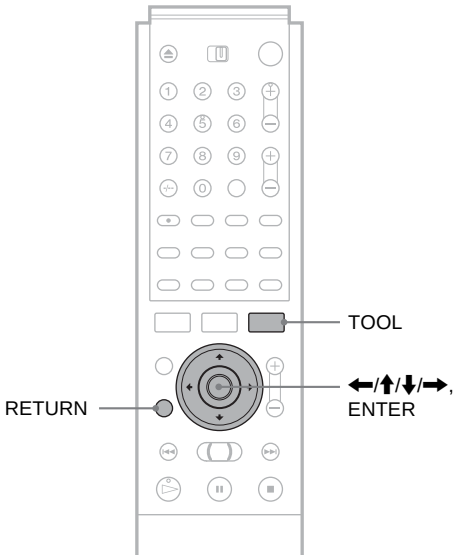
If the timer settings of a Synchro-Recording and another timer recording overlap

Regardless of whether or not the programme is a Synchro Rec programme, the programme that starts first has priority and the second programme starts recording only after the first programme has finished.



Labelling, Protecting, or Finalizing the Disc

Using the Disc Information display, you can label, protect, or finalize your disc. You can even erase the entire disc except for the protected titles. This section explains settings effective for the entire disc.



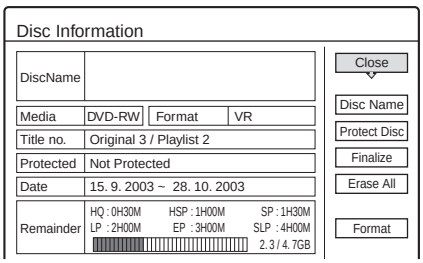
Labelling a disc (Disc Name)

-RW VR -RW VIDEO +RW -R

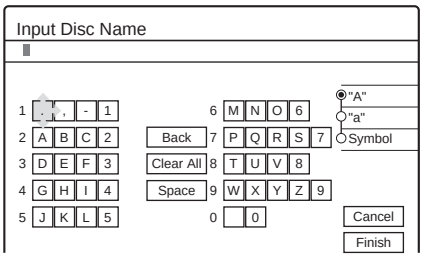
You can enter up to 64 characters for a disc name (the actual number of displayed characters will vary). The disc name will be displayed in the Title List, etc.

1 Press TOOL while the disc is in the recorder.
The Tool menu appears.

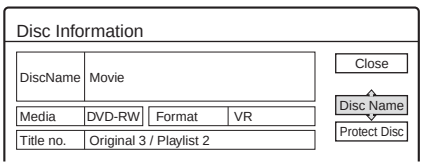
2 Press ↑/↓ to select "Disc Info," then press ENTER.
The Disc Information display appears.
Example: When the inserted disc is a DVD-RW (VR mode).



3 Press ↑/↓ to select "Disc Name," then press ENTER.
The display for entering a disc name appears.



4 Enter a name by following the explanation on *page 18*.
The Disc Information display appears with the new disc name.



5 Press RETURN to turn off the display.

Note

The disc name will not appear when the disc is played on a different recorder.

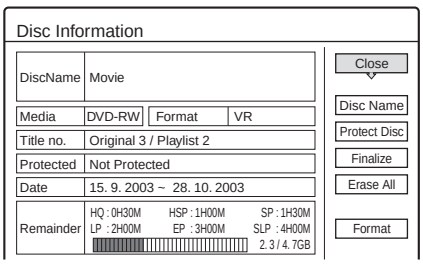
Protecting a disc (Protect Disc)

-RW VR

You can protect an entire disc. To protect individual titles, *see page 51*.
Note that this protection is effective only for inadvertent edit commands and erasure.

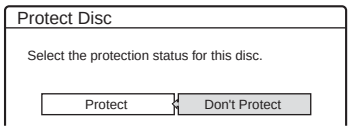
1 Press TOOL while the disc is in the recorder.
The Tool menu appears.

2 Press ↑/↓ to select "Disc Info," then press ENTER.
The Disc Information display appears.



→continued

3 **Press ↑/↓ to select “Protect Disc,” then press ENTER.**
The display for setting disc protection appears.



4 **Press ←/→ to select “Protect,” then press ENTER.**
The display returns to the Disc Information display.

5 **Press RETURN to turn off the display.**

To cancel the disc protection

1 **Repeat steps 1 to 3 above.**
The display for setting disc protection appears.

2 **Press ←/→ to select “Don’t Protect.”**
The display returns to the Disc Information display.

3 **Press RETURN to turn off the display.**

Finalizing a disc (Finalize)

-RW VR -RW VIDEO +RW -R

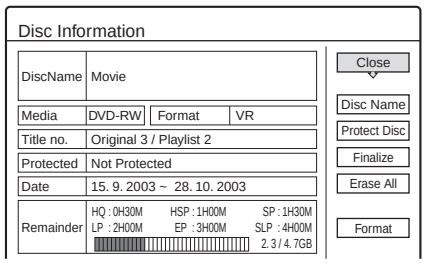
Finalizing is necessary when you play discs recorded with this recorder on other DVD equipment.
Before finalizing, check the differences between the disc types on the table below.
When you finalize a DVD-RW (Video mode), DVD+RW, or DVD-R, a title menu will be automatically created, which can be displayed on other DVD equipment.
When a finalized disc is in the recorder, the FINALIZED indicator lights up on the front panel.

Differences between the disc types

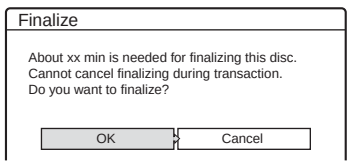
-RW VR	Finalizing is unnecessary when playing a disc on VR format compatible equipment. You may need to finalize the disc depending on the DVD equipment, or if the recording time is short. You can edit or record on the disc even after finalizing.
+RW	Finalizing is unnecessary, since DVD+RWs are automatically finalized when removed from the recorder. However, you may need to finalize the disc by following the steps below for certain DVD equipment, or if the recording time is short. You can edit or record on the disc even after finalizing.
-RW VIDEO	Finalizing is necessary when playing on equipment other than this recorder. After finalizing, you cannot edit or record on the disc. If you want to record on it again, reformat the disc *(page 35)*. However, all contents recorded in the disc will be erased.
-R	Finalizing is necessary when playing on equipment other than this recorder. After finalizing, you cannot edit or record on the disc.

1 **Press TOOL while the disc is in the recorder.**
The Tool menu appears.

2 **Press ↑/↓ to select “Disc Info,” then press ENTER.**
The Disc Information display appears.



3 **Press ↑/↓ to select “Finalize,” then press ENTER.**
The display shows the approximate time required for finalizing and asks for confirmation.



4 **Press ←/→ to select “OK,” then press ENTER.**
The recorder starts finalizing the disc.

To unfinalize a disc

If you cannot record or edit on the DVD-RW (VR mode) that has been finalized with other DVD equipment (a message appears), unfinalize the disc.
Select “Unfinalize” in step 3 above.

Hint
You do not need to finalize a disc again once the disc has been finalized with this recorder.

Notes
- Depending on the condition of the disc, recording, or the DVD equipment, discs may not play even when the discs are finalized.
- The recorder may not be able to finalize the disc if it was recorded on another recorder.

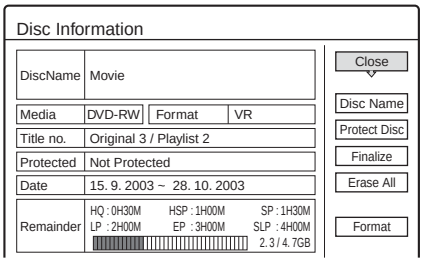
Erasing all the titles on the disc (Erase All)

-RW VR -RW VIDEO +RW

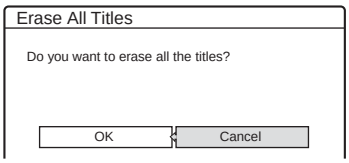
You can erase all the titles on the disc except the titles you have set protection.
The disc name and recording format remain the same.

1 **Press TOOL while the disc is in the recorder.**
The Tool menu appears.

2 **Press ↑/↓ to select “Disc info,” then press ENTER.**
The Disc Information display appears.



3 **Press ↑/↓ to select “Erase All,” then press ENTER.**
The display asks for confirmation.
When there is a protected title on the disc, a list of protected titles appears.



4 **Press ←/→ to select “OK,” then press ENTER.**
The titles are erased.

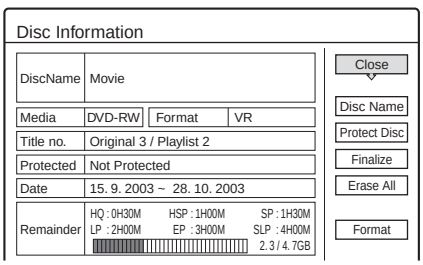
Reformatting a disc (Format)

-RW VR -RW VIDEO +RW

By reformatting, you can change the recording format of DVD-RWs, or record again on DVD-RWs (Video mode) that have been finalized. Make sure nothing important is left on the disc, as all the disc contents will be erased. For DVD+RWs, reformat the disc if you want to create a blank disc.

1 **Press TOOL while the disc is in the recorder.**
The Tool menu appears.

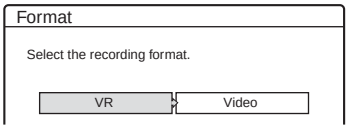
2 **Press ↑/↓ to select “Disc Info,” then press ENTER.**
The Disc Information display appears.



3 **Press ↑/↓ to select “Format,” then press ENTER.**
The display asks for confirmation.

4 **Press ←/→ to select “OK,” then press ENTER.**

◆ When you place a DVD-RW and set “Format Disc” to “Selectable” in Options Setup
The display asks you to select the recording format.



Press ←/→ to select “VR” or “Video,” then press ENTER.

The recorder starts formatting the disc.

Notes

- Even when you have set protection for the title, all the contents will be erased after formatting the disc.
- A protected disc cannot be reformatted (DVD-RW in VR mode only).

Playback

This section explains the basics of playback, such as playable disc types, and describes the settings necessary for playback in general.

- *Before Playing* *page 36*
- *Playing Discs* -RW VR -RW VIDEO +RW −R DVD CD *page 37*
- *Selecting a Recorded Title on a Disc* -RW VR -RW VIDEO +RW −R *page 40*
- *Searching for a Title/Chapter/Track* -RW VR -RW VIDEO +RW −R DVD CD *page 42*
- *Checking the Play Information and Playing Time* -RW VR -RW VIDEO +RW −R DVD CD *page 43*
- *Selecting the Sound* -RW VR DVD CD *page 44*
- *TV Virtual Surround Settings (TVS)* DVD *page 45*
- *Changing the Angles* DVD *page 46*
- *Displaying the Subtitles* DVD *page 47*
- *Adjusting the Playback Picture and Sound* +RW -RW VR -RW VIDEO −R DVD *page 47*

Before Playing

Read the following information before playing a disc.

Playable discs

This recorder can play the following discs in both the 12 cm and 8 cm sizes.

◆Disc types

DVD VIDEO*	
DVD-RW* Ver. 1.0 Ver. 1.1 Ver. 1.1 with CPRM	
DVD+RW*	
DVD-R*	
DVD+R*	
Music CD	
CD-R/CD-RW (Music CD format only)	

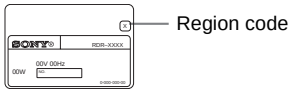
* "DVD VIDEO," "DVD-RW," "DVD+R," "DVD+RW," and "DVD-R" are trademarks.

Region code (DVD VIDEO only)

Your recorder has a region code printed on the rear of the unit and will only play DVD VIDEOs (playback only) labelled with identical region codes. This system is used to protect copyrights.

DVD VIDEOs labelled will also play on this recorder.

If you try to play any other DVD VIDEO, the message "Playback prohibited by region code." will appear on the TV screen. Depending on the DVD VIDEO, no region code indication may be labelled even though playing the DVD VIDEO is prohibited by area restrictions.



Discs that cannot be played on this recorder

The recorder cannot play the following discs:

- All CD-ROMs (including PHOTO CDs)
- CD-Rs/CD-RWs, other than those recorded in the music CD format
- Data part of CD-Extras
- VIDEO CDs
- Super VCDs
- DVD-ROMs
- DVD Audio discs
- DVD-RAMs
- HD layer on Super Audio CDs
- DVD VIDEOs with a different region code *(page 36)*

Notes on playing DTS sound tracks on a CD

- When playing DTS-encoded CDs, excessive noise will be heard from the analog stereo jacks. To avoid possible damage to the audio system, the consumer should take proper precautions when the analogue stereo jacks of the recorder are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1-channel decoder system must be connected to the digital jack of the recorder.
- Set the sound to "Stereo" using the (audio) button when you play DTS sound tracks on a CD *(page 44)*.
- Do not play DTS sound tracks without first connecting the recorder to an audio component having a built-in DTS decoder. The recorder outputs the DTS signal via the DIGITAL OUT (COAXIAL or OPTICAL) jack even if "DTS" is set to "Off" in the Audio Setup *(page 79)*, and may affect your ears or cause your speakers to be damaged.

Notes on playing DVDs with a DTS sound track

- DTS audio signals are output only through the DIGITAL OUT (COAXIAL or OPTICAL) jack.
- When you play a DVD with DTS sound tracks, set "DTS" to "On" in the Audio Setup *(page 79)*.
- If you connect the recorder to audio equipment without a built-in DTS decoder, do not set "DTS" to "On" in the Audio setup *(page 79)*. A loud noise may come out from the speakers, affecting your ears or causing the speakers to be damaged.

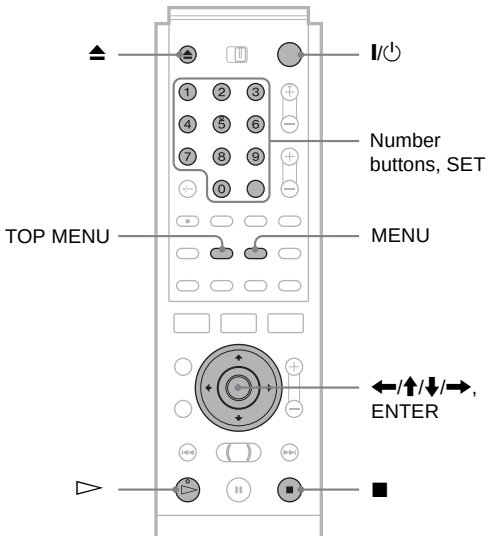
Notes

- The following type of high-speed discs can be played back on this recorder: up to 2×-speed DVD-RWs (Revision 1.0), up to 4×-speed DVD-Rs (Revision 1.0), or up to 4×-speed DVD+RWs/DVD+Rs.
- DVD-RW/-Rs, DVD+RWs/+Rs, or CD-RW/-Rs recorded on another recording device cannot be played on this recorder if they have not been correctly finalized. Some discs cannot be played due to the recording quality or physical condition of the disc, or the characteristics of the recording device and authoring software.

Playing Discs

-RW VR -RW VIDEO +RW -R DVD CD

Depending on the disc, some operations may differ, or certain restrictions may apply. Refer to the operating instructions supplied with your disc.



1 Press I/⏻.

The recorder turns on and the power indicator lights up in green.

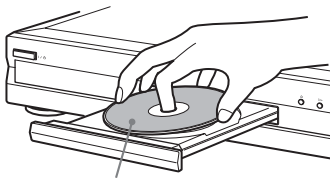
2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.

◆ **When using an amplifier**

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

3 Press ⏏ to open the disc tray.

4 Place a disc on the disc tray.



With the playing side facing down

5 Press ⏏ to close the disc tray.

Wait until "LOAD" disappears in the front panel display.

→*continued*

◆ **When playing a DVD-RW/DVD+RW/DVD-R**

You can select the title from the Title List menu. *See "Selecting a Recorded Title on a Disc" (page 40).*

◆ **If a menu appears on the TV screen**

See "Using the DVD's Menu" below.

6 **Press ▷.**

The recorder starts playback.

To adjust the volume

Adjust the volume of your TV or amplifier (receiver).

To stop playback

Press ■.

To turn off the recorder

Press I/⏻.

Hint

You can also start or stop playback using the Tool menu.

To start playback automatically with one button (One Touch Play)

If you use the SMARTLINK connection, you can turn on the recorder and the TV, set your TV's input to the recorder, and start playback automatically with one button.

Press ▷ while a disc is in the recorder.

The TV and recorder turn on and the TV's input is switches to the recorder. Playback starts automatically.

Note

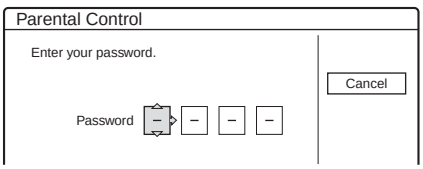
When you use this function, leave the TV on, or in the standby mode.

To play a DVD VIDEO for which Parental Control is set

When the message "Do you want to temporarily change parental control to *?" appears on the TV screen, follow steps below.

1 **Press ←/→ to select "OK," then press ENTER.**

The display for entering your password appears.



2 **Enter your four digit password using the number buttons.**

The cursor moves to "OK."

3 **Press ENTER to select "OK."**

The recorder starts playback.

To register or change the password, *see "Parental Control (DVD VIDEO only)" (page 80).*

Using the DVD's Menu

-RW VIDEO +RW −R DVD

When you play a DVD VIDEO which contains several titles, you can select the title you want using the TOP MENU or MENU button.

When you play DVD VIDEOs that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.

1 **Press TOP MENU or MENU.**

The disc's menu appears on the TV screen.

The contents of the menu vary from disc to disc.

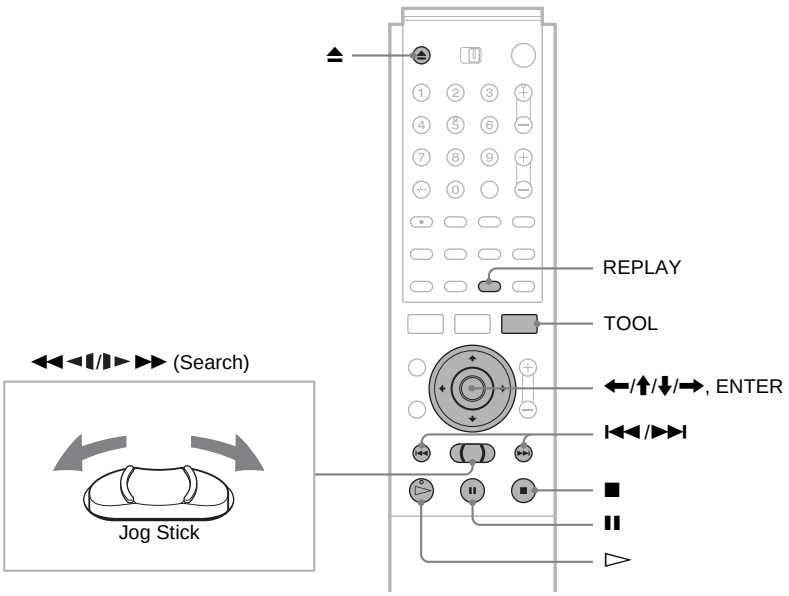
2 **Press ←/↑/↓/→ or the number buttons to select the item you want to play or change.**

3 **Press ENTER.**

Hint

If you are playing a finalized DVD-R, DVD+RW, or DVD-RW (Video mode), you can display the menu with the TOP MENU or MENU button. *See "Finalizing a disc (Finalize)" (page 34)* for more information about finalizing and DVD menus.

Basic operations/Changing the playback speed



To:	Operations	Discs
Pause	Press II. To resume playback, press II or ▷.	All discs
Locate the beginning of the title/chapter/track	During playback, press ►►I or I◄◄. • ►►I : Goes to the next title/chapter/track. • I◄◄ : Goes back to the beginning of the previous title/chapter/track. For DVD-RWs (VR mode), you can manually add chapter marks (*page 54*).	All discs
Stop play and remove the disc	Press ⏏.	All discs
Replay the previous scene	Press REPLAY. This function is useful when you want to review a scene or dialogue you missed.	DVD −R −RW VIDEO +RW −RW VR
Fast forward/fast reverse (search)	While playing a disc, briefly push the Jog Stick to the left or right. Each time you push the Jog Stick, the search speed changes as follows: fast reverse ◄◄◄I fast forward I►►► FR1 ← → FF1 FR2 ← ← → → FF2 FR3* ← ← ← → → → FF3* To resume to the normal speed, press ▷. When you push and hold the Jog Stick down to the left or right, fast forward/fast reverse continues at the selected speed until you release the Jog Stick. Actual speeds may differ with some discs or recording modes. * Music CDs cannot be played at FR3/FF3.	All discs
Frame by frame (Slow-motion play)	Push ◄◄◄I/I►►►► Jog Stick for more than one second when the recorder is in pause mode. To return to the normal speed, press ▷.	DVD −R −RW VIDEO +RW −RW VR
Watch one frame at a time (Freeze Frame)	Push ◄◄◄I/I►►►► Jog Stick briefly when the recorder is in pause mode. To return to the normal speed, press ▷.	DVD −R −RW VIDEO +RW −RW VR

➡*continued*

To resume playback from the point where you stopped the disc (Resume Play)

When you stop the disc, the recorder remembers the point where you pressed ■.

- For DVDs:
 Resume Play works as long as you do not open the disc tray (you may turn off the recorder).
- For CDs:
 Resume Play works as long as you do not turn off the recorder or open the disc tray.

1 **While playing a disc, press ■ to stop playback.**
"RESUME" appears on the front panel display.
If "RESUME" does not appear, Resume Play is not available.

2 **Press ▷.**
The recorder starts playback from the point where you stopped the disc in step 1.

◆To play from the beginning of the disc

Reset the resume point using the Tool menu.
Press TOOL and press ↑/↓ to select "Reset Resume," then press ENTER.

◆To play from the beginning of the title

You can locate the beginning of the title/track using the Tool menu. Press TOOL and press ↑/↓ to select "Play From Start," then press ENTER. Playback automatically starts from the beginning of the title.

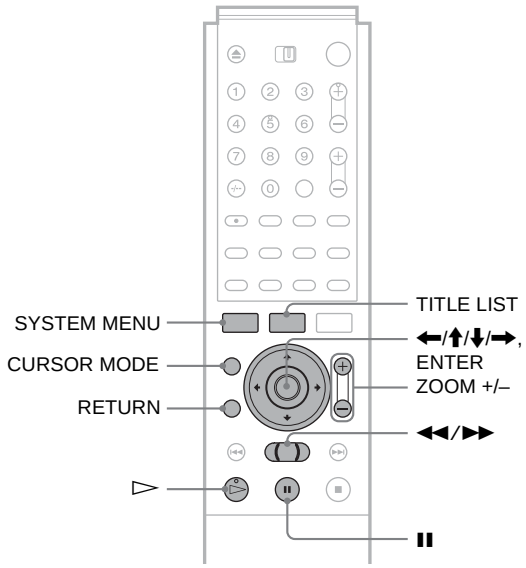
Notes

- Depending on the disc, the recorder may not resume playback from where you stopped the disc.
- Depending on where you stopped the disc, the recorder may not resume playback from exactly the same point.
- The point where you stopped playing is cleared when:
 – you open the disc tray.
 – you play another title.
 – you switch the Title List menu (Original or Playlist).
 – you edit the disc, such as erasing a title.
 – you change the settings on the recorder.
 – you turn off the recorder (CD only).
 – you make a recording (except for DVD-RWs in VR mode).

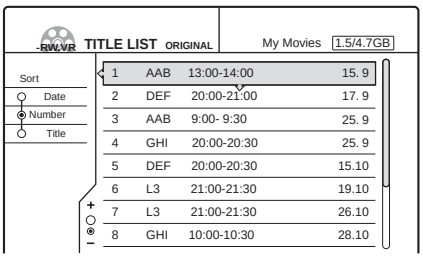
Selecting a Recorded Title on a Disc

-RW VR -RW VIDEO +RW −R

The Title List menu displays all the titles recorded on the disc and you can select the one you want to play. For details, *see also page 15*.



1 **Insert a disc and press TITLE LIST.**
The Title List menu appears.
For a DVD-RW (VR mode), select "Original" or "Playlist" using the Tool menu *(page 16)*.



2 **Press ↑/↓ to select the title, then press ENTER.**
The sub-menu appears.

3 **Press ↑/↓ to select "Play," then press ENTER.**
Playback starts from the selected title on the disc.

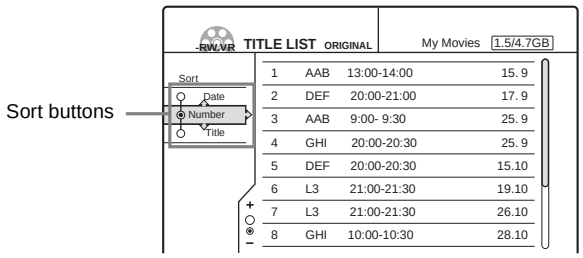
Hints

- You can also display the Title List menu using the System Menu. Press SYSTEM MENU and select "TITLE LIST," then press ENTER *(page 15)*.
- You can select Page mode by pressing CURSOR MODE *(page 16)*. In Page mode, you can change the page of the Title List using ↑/↓.
- You can also use the ▷ button to start playback.
- To change the title name, *see "Labelling a title (Title Name)" (page 51)*. If the programme contains Teletext signals, the title name will automatically appear in the Title List.

To change the title order (Sort)

You can sort the titles according to date, number, or title.

1 Press ← while the Title List menu is turned on.
The Sort buttons are selected.



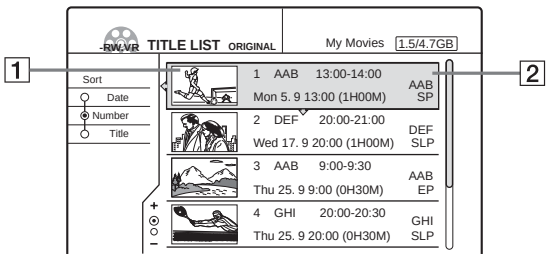
2 Press ↑/↓ to select date, number, or title, then press ENTER.
The titles are sorted in selected order.

Order	Sorted
Date	in order of date (when the titles were recorded). The title that is recorded most recently is listed at the top.
Number	in order of recorded title number.
Title	in alphabetical order. A title that has no name is listed at the bottom.

To show the list in greater detail (Zoom)

Press ZOOM+ while the Title List menu is turned on to view detailed information about the title.
To return to the normal Title List menu, press ZOOM–.

Example: DVD-RW (VR mode)



1 Title's thumbnail picture

2 Title information:
Displays the title number, title name, date/time of recording, programme position, and recording mode*.
- 🔒 indicates that the title is protected.
- ● indicates that the title is being recorded.
- DV indicates that the title is recorded from the DV input.

* The displayed recording mode refers to the mode selected when the programme was recorded on this recorder.

To display the Title List automatically with one button (One Touch Menu)

If you use the SMART LINK connection, you can easily display the Title List menu by pressing just the TITLE LIST button.

Press TITLE LIST while a disc is in the recorder.
The TV and recorder turn on and the TV's input is switched to the recorder.
The Title List menu appears.

Note

When you use this function, leave the TV on, or in the standby mode.

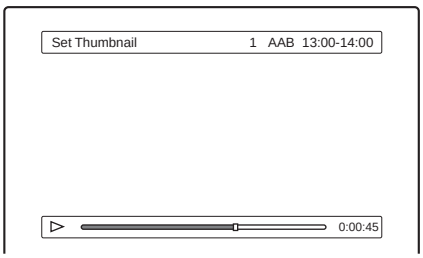
To change a title thumbnail picture (Thumbnail) (DVD-RW in VR mode only)

You can select a favourite scene for a thumbnail picture in a zoomed Title List menu.

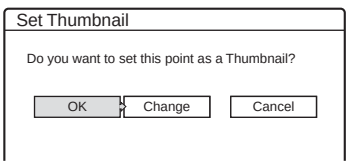
1 Press TITLE LIST while a disc is in the recorder.
The Title List menu appears.

2 Press ↑/↓ to select a title whose thumbnail picture you want to change, then press ENTER.
The sub-menu appears.

3 Press ↑/↓ to select "Set Thumbnail," then press ENTER.
The display for setting a thumbnail picture appears. The selected title starts to play in the background.



4 While watching the playback picture, press ▷, II, or ◀◀/▶▶ to select the scene you want to set for a thumbnail picture, then press ENTER.
Playback pauses at the selected scene, and the display asks for confirmation.



To change the selection, select "Change."

5 Press ←/→ to select "OK," then press ENTER.
The scene is set for the title's thumbnail picture.

6 Press RETURN to turn off the display.

Hint

After recording, the first scene of the recording (the title) is automatically set for the thumbnail picture.

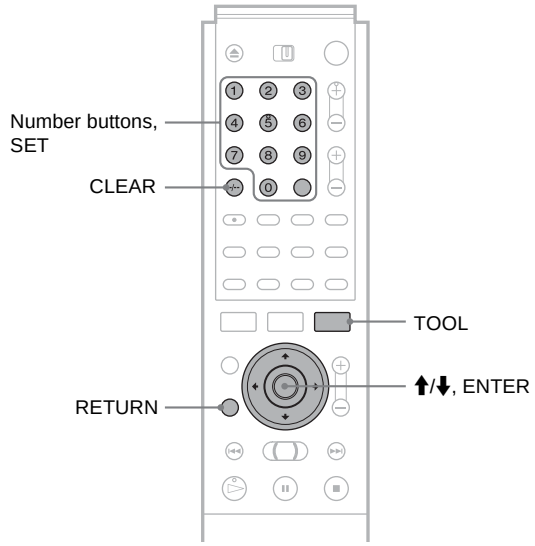
Note

Title thumbnail pictures are displayed only on this recorder.

Searching for a Title/ Chapter/Track

-RW VR -RW VIDEO +RW −R DVD CD

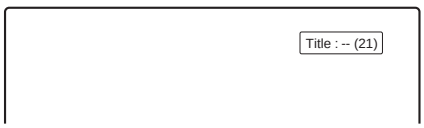
You can search a DVD by title or chapter, and a CD by track. Since titles and tracks are assigned unique numbers on the disc, you can select the desired title/chapter/track by entering its number. Or, you can search for a scene using the time code.



1 **Press TOOL during playback.**
The Tool menu appears.

2 **Press ↑/↓ to select the search method, then press ENTER.**
- Title Search (for DVDs)
- Chapter Search (for DVDs)
- Track Search (for CDs)
- Time Search (for DVDs): Searches for a starting point by entering the time code.

The display for entering the number appears.
Example: Title Search



The number in parentheses indicates the total number of titles, tracks, etc.

3 **Press the number buttons to select the number of the title, chapter, track, time code, etc., you want.**
For example: Time Search
To find a scene at 2 hours, 10 minutes, and 20 seconds, enter “21020.”

◆ **If you make a mistake**
Press CLEAR to cancel the number, then select another number.

4 **Press SET.**
The recorder starts playback from the selected title/ chapter/track/scene.

To cancel searching

Press RETURN.

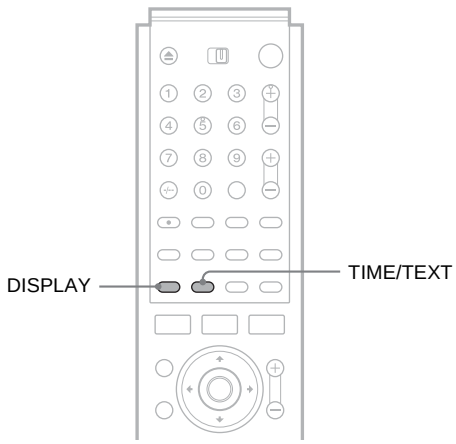
Notes

- You cannot search for a still picture on a DVD-RW (VR mode) using Time Search.
- If you enter a number that does not exist, the current selection does not change.

Checking the Play Information and Playing Time

-RW VR -RW VIDEO +RW -R DVD CD

You can check the playing time and remaining time of the current title, chapter, or track. Also, you can check the disc name recorded on the disc.



Press DISPLAY repeatedly.

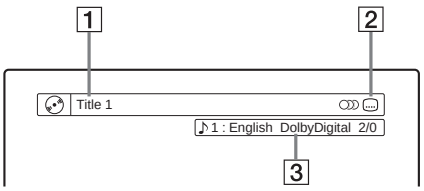
Each time you press the button, the display changes as follows:

Title/track information (Display 1)
↓
Play mode/time information (Display 2)
↓
(Display off)

The displays differ depending on the disc type or playing status.

◆ Display 1

Example: When playing a DVD VIDEO



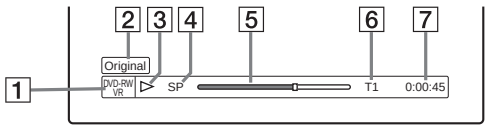
1 Title/track number/name

2 Available disc functions (angle/audio/subtitle, etc.)

3 The current selected function or audio setting (appears only temporarily)

◆ Display 2

Example: When playing a DVD-RW (VR mode)



1 Disc type/format (*page 20)*

2 Title type (Original or Playlist) (*page 16)*

3 Play mode

4 Recording mode* (*page 21)*

5 Playing status bar

6 Title number (*page 40)*

7 Playing time

* The displayed recording mode refers to the mode selected when the programme was recorded on this recorder.

To check the remaining time

Press TIME/TEXT repeatedly while the Display 2 is displayed above.
Each time you press the button, the display changes in the following order.

◆When playing a DVD

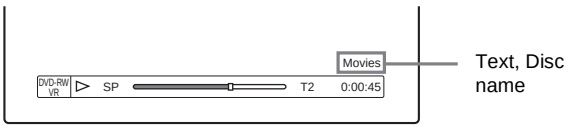
- Playing time of the current title (hours: minutes: seconds)
- Remaining time of the current title
- Playing time of the current chapter
- Remaining time of the current chapter
- Disc name (DVD-RW/DVD+RW/DVD-R only)

◆When playing a CD

- Playing time of the current track (minutes: seconds)
- Remaining time of the current track
- Playing time of the current disc
- Remaining time of the current disc
- Disc name

To check the disc name (except DVD VIDEO)

Press TIME/TEXT repeatedly while the Display 2 is displayed. The text appears only when text is recorded on a CD, or if you input the disc's name. To label a DVD-RW/DVD+RW/DVD-R, *see "Labelling a disc (Disc Name)"* (*page 33*).



Hint

When "Auto Display" is set to "On" (default) in Options Setup *(page 82)*, playback information automatically appears for several seconds after starting playback.

➡*continued*

Checking the playing time on the front panel display

You can view the playing or time information and text displayed on the TV screen also on the front panel display.
Press TIME/TEXT repeatedly.
Each press of the button changes the information as follows:

◆When playing a DVD

Title playing time and the current title/chapter number



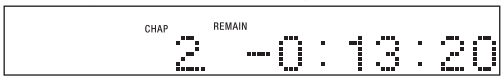
Remaining time of the current title



Playing time and number of the current chapter



Remaining time of the current chapter



Disc name



◆When playing a CD

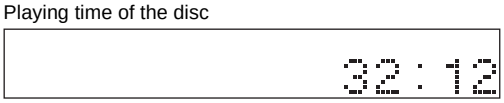
Track playing time and the current track/index number



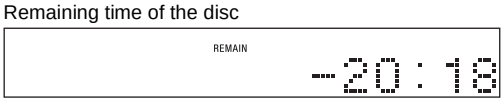
Remaining time of the current track



Playing time of the disc



Remaining time of the disc



Disc name



Hint

Long text that does not fit in a single line will scroll across the front panel display.

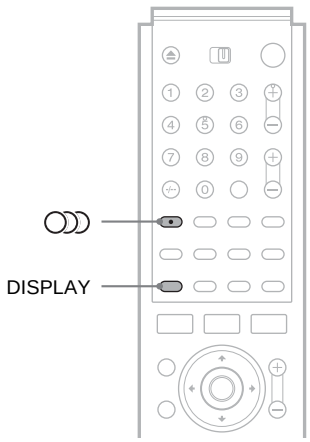
Notes

- Depending on the type of disc being played, the disc's text may not be displayed.
- The recorder can only display the first level of a CD's text, such as the disc name or title.
- The letters or symbols that cannot be displayed are replaced with "*."

Selecting the Sound

-RW VR DVD CD

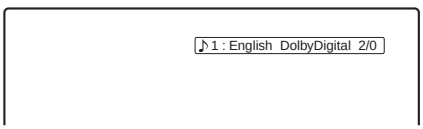
When playing a DVD VIDEO recorded in multiple audio formats (PCM, Dolby Digital, MPEG audio, or DTS), you can select the audio format. If a DVD VIDEO is recorded with multilingual tracks, you can also change the language.
With CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can listen to the instruments only from both speakers, by selecting the left channel.



Press ◯◯ (audio) repeatedly during playback to select one of the audio options.

The following display appears.

Example: DVD VIDEO



◆When playing a DVD VIDEO

Depending on the DVD VIDEO, the choice of language varies. When four numbers are displayed, they indicate a language code. To see which language the code represents, *see "Language Code List"* (*page 92)*. When the same language is displayed two or more times, the DVD VIDEO is recorded in multiple audio formats.

◆When playing a DVD-RW in VR mode

The types of sound tracks recorded on a disc are displayed. The default setting is underlined.
Example:

- 1: Main (main sound)
- 1: Sub (sub sound)
- 1: Main/Sub (main and sub sound)

◆When playing a CD

The default setting is underlined.

- Stereo: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

Notes

- Depending on the disc, you may not be able to change the audio format.
- When playing a DVD-RW in VR mode: If you connected to an AV amplifier (receiver) using the DIGITAL OUT (COAXIAL or OPTICAL) jack and want to switch between the sound tracks, set "Dolby Digital" in Audio Setup to "D-PCM."

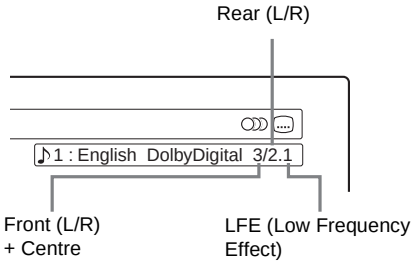
Checking the audio signal format

When playing a DVD, you can check the format of the current audio signal (Dolby Digital, MPEG audio, DTS, PCM, etc.).

Press DISPLAY.

The following display appears.

Example: Dolby Digital 5.1 ch



◆About audio signals

Audio signals recorded in a disc contain the sound elements (channels) shown below. Each channel is output from a separate speaker.

- Front (L)
- Front (R)
- Centre
- Rear (L)
- Rear (R)
- Rear (Monaural): This signal can be either Dolby Surround Sound processed signals or Dolby Digital sound's monaural rear audio signals.
- LFE (Low Frequency Effect) signal

Note

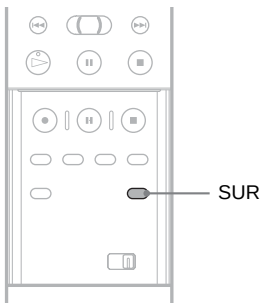
If "DTS" is set to "Off" in Audio Setup, the DTS track selection option will not appear on the screen even if the disc contains DTS tracks *(page 79)*.

TV Virtual Surround Settings (TVS)

DVD

When you connect a stereo TV or two front speakers, TVS (TV Virtual Surround) lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers.

TVS was developed by Sony to produce surround sound for home use using just a stereo TV.



Press SUR repeatedly during playback to select one of the TVS sounds.

Refer to the following explanations given for each item.

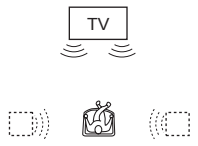
- Off
- Dynamic
- Wide
- Night
- Standard

TV Virtual Surround modes

◆Dynamic

Creates one set of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.

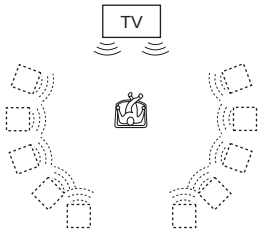
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



◆Wide

Creates five sets of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.

This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



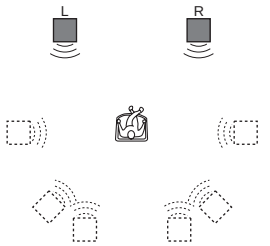
➡*continued*

◆Night

Large sounds, such as explosions, are suppressed, but quieter sounds are unaffected. This feature is useful when you want to hear the dialogue and enjoy the surround sound effects of "Wide" at low volume.

◆Standard

Creates three sets of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.
This mode is effective when you use two separate front speakers.



L: Front speaker (left)
R: Front speaker (right)
□: Virtual speaker

To cancel the setting

Select "Off".

Hint

You can select the TVS mode from the Tool menu (*page 48*).

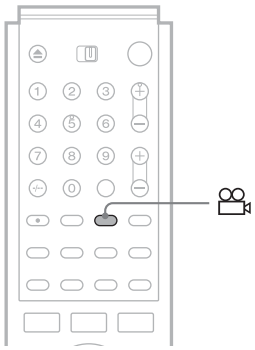
Notes

- When the playing signal does not contain a signal for the rear speakers, the surround effects will be difficult to hear.
- When you select one of the surround modes, turn off the surround setting of the connected TV or amplifier (receiver).
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings.
- Not all discs will respond to the "Night" function in the same way.
- The TVS function cannot be used with discs recorded on this recorder.
- When you use the DIGITAL OUT (OPTICAL or COAXIAL) jack to listen to MPEG audio signals and set "MPEG" to "MPEG" in Audio Setup, no sound will come from your speakers if you select one of the TVS modes.

Changing the Angles

DVD

If various angles (multi-angles) for a scene are recorded on a DVD VIDEO, "ANGLE" appears in the front panel display, indicating that you can change the viewing angle.



Press (angle) repeatedly during playback to select an angle.

The scene changes to the selected angle.



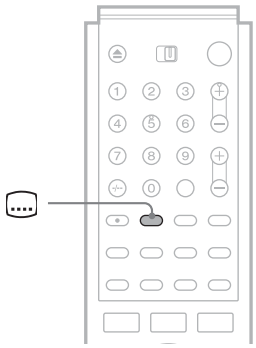
Notes

- Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the disc.
- You cannot change the angles when playing a disc recorded on this recorder.

Displaying the Subtitles

DVD

If subtitles are recorded on a disc you can change the subtitle language or turn the subtitles on and off whenever you want during playback.



Press (subtitle) repeatedly during playback to select a setting.



Depending on the DVD VIDEO, the choice of language varies. When four numbers are displayed, they indicate a language code. To see which language the code represents, *see "Language Code List"(page 92).*

To turn off the subtitles

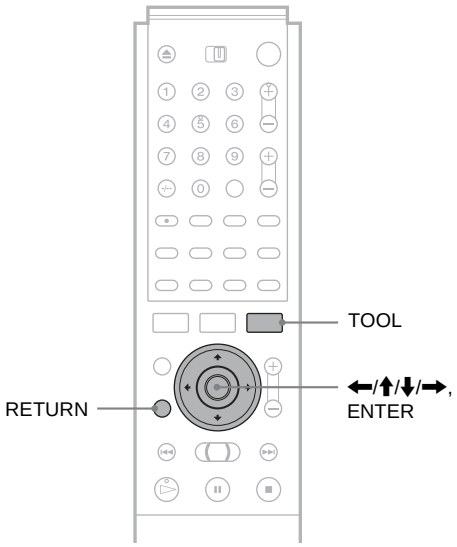
Select "Off".

Notes

- Depending on the DVD VIDEO, you may not be able to change the subtitle language even if multilingual subtitles are recorded on it. You also may not be able to turn them off.
- You cannot change the subtitles when playing a disc recorded on this recorder.

Adjusting the Playback Picture and Sound

You can adjust the video/audio signal from the recorder to obtain the picture or sound quality you want.

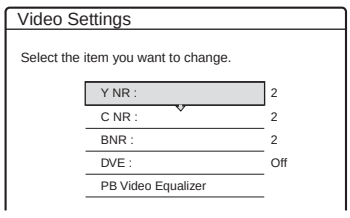


Adjusting the picture quality

-RW VR -RW VIDEO +RW -R DVD

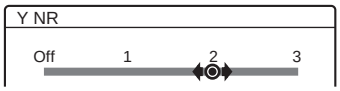
1 Press TOOL during playback.
The Tool menu appears.

2 Press ↑/↓ to select "Video Settings," then press ENTER.
The following display appears.



3 Press ↑/↓ to select the item you want to adjust, then press ENTER.
The adjustment display appears.

Example: Y NR



◆ **Y NR (luminance noise reduction)**
Reduces noise contained in the luminance element of the video signal.

→*continued*

◆ **C NR (chroma noise reduction)**

Reduces noise contained in the colour element of the video signal.

◆ **BNR (block noise reduction)**

Reduces "block noise" or mosaic like patterns in the picture.

◆ **DVE (digital video enhancer)**

Sharpens the outlines of the images.

◆ **PB Video Equalizer (Playback video equalizer)**

Adjusts the picture in greater detail.
Press ↑/↓ to select the item you want to adjust, then press ENTER.

- Contrast: changes the contrast.
- Brightness: changes the overall brightness.
- Color: makes the colours deeper or lighter.
- Hue: changes the colour balance.

4 Press ←/→ to adjust the setting, then press ENTER.

The larger the number, the greater the effect. The default settings are underlined.

Items	Settings
Y NR	Off 1 <u>2</u> 3
C NR	Off 1 <u>2</u> 3
BNR	Off 1 <u>2</u> 3
DVE	<u>Off</u> 1 2 3
PB Video Equalizer	
Contrast	–3 ~ <u>0</u> ~ 3
Brightness	–3 ~ <u>0</u> ~ 3
Color	–3 ~ <u>0</u> ~ 3
Hue	–3 ~ <u>0</u> ~ 3

5 Repeat steps 3 and 4 to adjust any other items.

6 Press RETURN to turn off the display.

Notes

- If the outlines of the images on your screen become blurred, set "BNR" to "Off."
- Depending on the disc or the scene being played, the BNR effect may be hard to discern. The BNR function may not work with some screen sizes.
- When playing a disc recorded in SLP recording mode, the BNR setting may have little effect.

Adjusting the sound quality

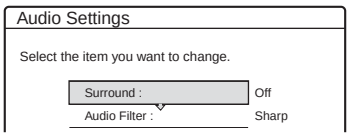
-RW VR -RW VIDEO +RW -R DVD CD

1 Press TOOL.

The Tool menu appears.

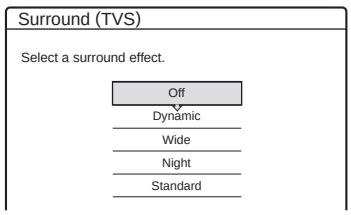
2 Press ↑/↓ to select "Audio Settings," then press ENTER.

The following display appears.



3 Press ↑/↓ to select the item, then press ENTER.

Example: Surround (TVS)



◆ **Surround (DVD VIDEO only)**

Selects one of the surround modes. For more information, *see "TV Virtual Surround Settings (TVS)" (page 45)*.

- Off (default)
- Dynamic
- Wide
- Night
- Standard

◆ **Audio Filter (all discs)**

Selects the digital filter to reduce noise above 22.05 kHz (Fs* is 44.1 kHz), 24 kHz (Fs is 48 kHz), or 48 kHz (Fs is above 96 kHz).

- Sharp (default): Provides a wide frequency range and spatial feeling.
- Slow: Provides smooth and warm sound.

* Sampling frequency of audio source

This function affects output signals from the LINE 1 TV, LINE 3/DECODER, or LINE 2 OUT (AUDIO L/R) jacks.

4 Press ←/↑/↓/→ to select the option, then press ENTER.

5 Press RETURN to turn off the display.

Note

There may be little effect by changing the Audio Filter depending on the disc or playback environment.

Editing a DVD

This section introduces the basics of DVD editing, and explains edit functions for the recording on a disc.

- *Before Editing**page 49*
- *Basic Editing* -RW VR -RW VIDEO +RW -R*page 51*
- *Advanced Editing (Playlist Edit)* -RW VR*page 54*

Before Editing

This recorder offers various edit options. Before you edit, read the following to see what is available for your disc.
Note that if you remove the disc while editing, you may lose the edited contents.

Checking the disc type, recording format, and title type

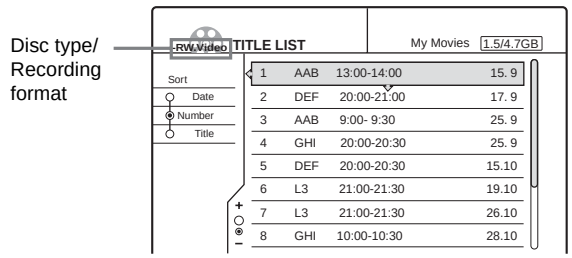
Press TITLE LIST, and check the disc type and recording format indicated at the top of the Title List menu. If the disc is a VR mode disc, check also the title type, Original or Playlist. If you edit an original title instead of a Playlist title by mistake, it is irreversible. You will be unable to recover the erased title, or revert the edited title to the previous status.

Edit options for DVD+RWs/DVD-Rs/ DVD-RWs (Video mode)

-RW VIDEO +RW -R

You can perform simple edits. Since Video mode titles are actual recordings on the disc, you cannot undo the edits you have done.

Title List menu for DVD+RWs/DVD-Rs/ DVD-RWs (Video mode)



Basic edit functions available with Video mode titles:
– Setting protection against erasure *(page 51)*.
– Labelling a title *(page 51)*.
– Erasing multiple titles *(page 52)*.
– Erasing a title *(page 52)*.

Notes

- Once the disc is finalized, you cannot edit or record on the disc (except for DVD-RWs in VR mode and DVD+RWs).
- You cannot create a Playlist (see below) on a DVD-RWs (Video mode), DVD+RW, or DVD-Rs.

➡*continued*

Edit options for DVD-RWs (VR mode)

-RW VR

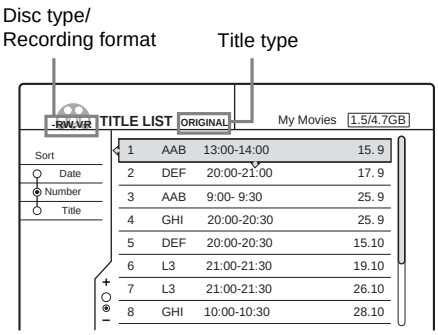
You have two options for a DVD-RW (VR mode): editing either the original recording (called the "Original"), or the playback information created from the Original (called a "Playlist"). Since each is different in nature and offers different merits, read the following and select the one that better suits your needs.

Editing the "Original"

Basic edit functions available with Originals:
– Labelling a title *(page 51)*.
– Setting protection against erasure *(page 51)*.
– Erasing a title *(page 52)*.
– Erasing multiple titles *(page 52)*.
– Erasing a section of a title (A-B Erase) *(page 53)*.

All edits made to the original title are final. If you plan to retain an unaltered original recording, create and edit a Playlist (see below).

The Title List (Original) menu displays all the original titles on the disc.



Note

Original titles provide a source for the created Playlist. If you use an original title for a Playlist, you will be unable to erase the original title.

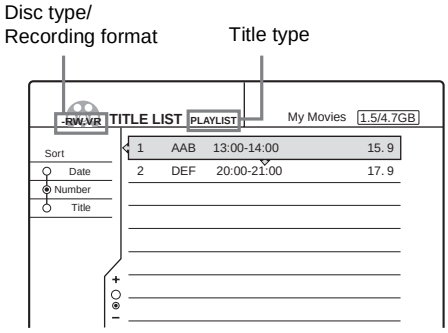
Editing the "Playlist"

A Playlist is a group of Playlist titles created from the original title for editing purposes. When you create a Playlist, only the control information necessary for playback, such as the playback order, is stored on the disc.

Example: You have recorded the final few matches of a football tournament on a DVD-RW (VR mode). You want to create a digest with the goal scenes and other highlights, but you also want to keep the original recording.
In this case, you can collect the scenes of the highlights, and create playback information (a Playlist title). You can even rearrange the scene order within the Playlist title.

The above is only an example. Try using the Playlist's various edit functions, or use them in conjunction with an Original edit. Devise your own ways of editing with Playlists and Originals.

The Title List (Playlist) menu displays the Playlist titles on the disc.



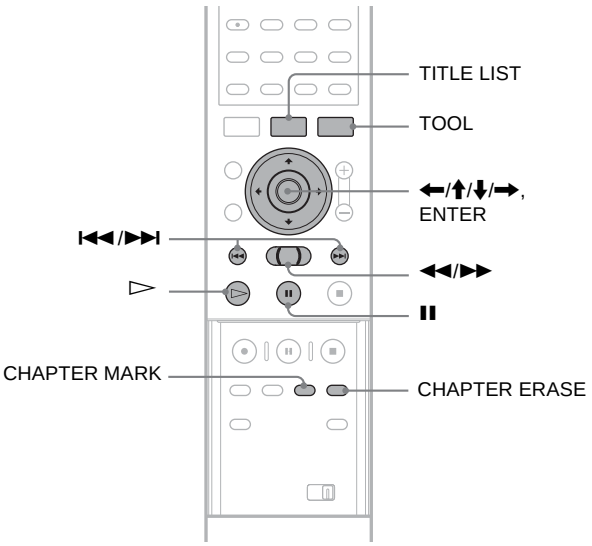
Advanced edit functions available with the Playlist:
– Labelling a title *(page 51)*.
– Erasing a title *(page 52)*.
– Erasing multiple titles *(page 52)*.
– Erasing a section of a title (A-B Erase) *(page 53)*.
– Creating a Playlist title from selected titles and scenes *(page 54)*.
– Rearranging the title order *(page 57)*.
– Dividing a title into multiple titles *(page 57)*.
– Combining multiple titles into one title *(page 58)*.

Basic Editing

This section explains the basic edit functions. Note that these edits are irreversible to the original status.
If you want to edit a DVD-RW (VR mode) without changing the original recordings, create a Playlist (*page 54*).

Notes

- If "No new data can be added to this disc" appears on the screen, erase any unwanted titles before editing.
- For DVD-Rs/DVD-RWs (Video mode):
 Finish all the editing before finalizing the disc. You cannot edit a finalized disc.
- For original titles in DVD-RWs (VR mode):
 Original titles provide a source for derived Playlist. When you use an original title for a Playlist, you will be unable to erase or edit the original title.

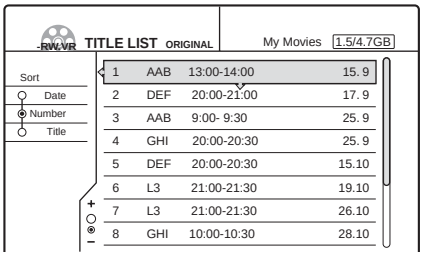


Labelling a title (Title Name)

-RW VR -RW VIDEO +RW −R

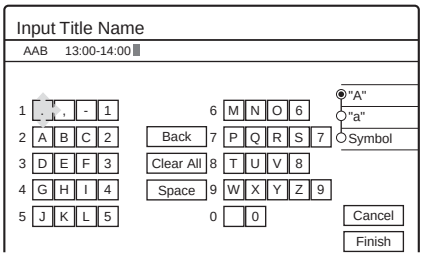
You can enter up to 64 characters for a name. The title name will be displayed in the Title List menu.

1 Press TITLE LIST.
The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOL and select either "Original" or "Playlist" from the Tool menu to change the Title List, if necessary.



2 Press ↑/↓ to select the title, then press ENTER.
The sub-menu appears.

3 Press ↑/↓ to select "Title Name," then press ENTER.
The display for entering a title name appears.
To enter character, *see page 18*.



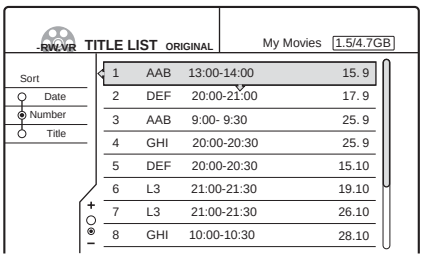
4 When you finish entering the title name, press ←/↑/↓/→ to select "Finish."
A new Title List menu appears with the title of the entered name.

Protecting a title (Protect)

-RW VR -RW VIDEO +RW −R

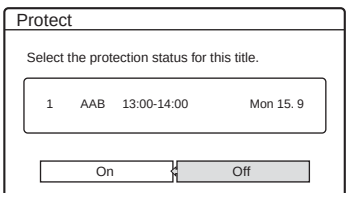
You can set protection for a title so that the title cannot be erased.

1 Press TITLE LIST.
The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOL and select "Original" from the Tool menu.



2 Press ↑/↓ to select the title, then press ENTER.
The sub-menu appears.

3 Press ↑/↓ to select "Protect," then press ENTER.
The following display appears.



4 Press ←/→ to select "On," then press ENTER.
The protection is set.

→*continued*

To cancel the protection

1. **Select the protected title in step 2.**
2. **Press ↑/↓ to select "Protect," then press ENTER.**
3. **Press ←/→ to select "Off," then press ENTER.**

To protect the entire disc

See page 33.

Note

You cannot protect Playlist titles.

Erasing a title (Erase)

-RW VR -RW VIDEO +RW −R

You can erase titles individually using the sub-menu.

◆For DVD-Rs:

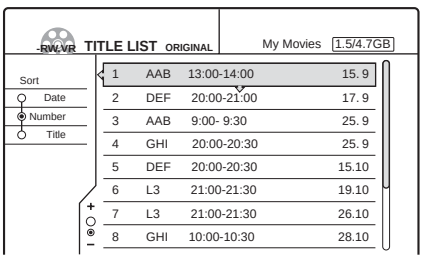
Note that erasing titles on a DVD-R does not increase available disc space.

◆For DVD-RWs (VR mode):

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOL and select either "Original" or "Playlist" from the Tool menu to change the Title List, if necessary.



2 Press ↑/↓ to select the title you want to erase, then press ENTER.

The sub-menu appears.

3 Press ↑/↓ to select "Erase," then press ENTER.

The title is erased.

◆ When the selected title is protected

The display asks for confirmation.

- To continue the procedure, press → to select "Change."
 The protection display appears. Select "Off" by pressing ←/→, then press ENTER.
- To cancel the procedure, select "Close" by pressing ←/→, then press ENTER.

◆ When the selected title is referred to by a Playlist

Select "Close" as you are unable to delete an original title that is referred to by a Playlist.
If you want to delete the original title, first delete the Playlist title. Then, delete the original title.

Hint

If you are using a DVD-RW (Video mode) or DVD+RW, you can erase a title using the Disc Map (*page 22*).

Erasing multiple titles (Erase Titles)

-RW VR -RW VIDEO +RW −R

You can erase more than two titles at one time using the Tool menu.

◆For DVD-Rs:

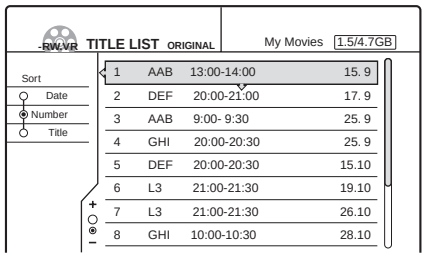
Note that erasing titles on a DVD-R does not increase available disc space.

◆For DVD-RWs (VR mode):

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOL and select either "Original" or "Playlist" from the Tool menu to change the Title List, if necessary.

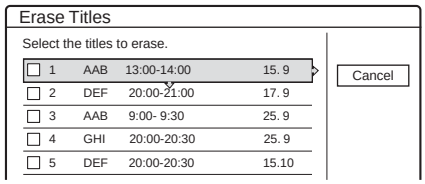


2 Press TOOL.

The Tool menu appears.

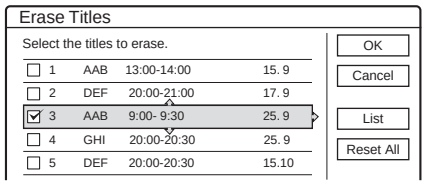
3 Press ↑/↓ to select "Erase Titles," then press ENTER.

The display for selecting titles to be erased appears.



4 Press ↑/↓ to select the title, then press ENTER.

A check mark appears in the check box next to the selected title.
To clear the check mark, press ENTER again.



To list all of the titles to be erased, select "List."
To clear all the check marks, select "Reset All."

5 Repeat step 4 to select all the titles you want to erase.

◆ **When the selected title is protected**

The display asks for confirmation.

- To continue the procedure, press ➡ to select "Change."
 The protection display appears. Select "Off" by pressing ⬅/➡, then press ENTER.
- To cancel the procedure, select "Close" by pressing ⬅/➡, then press ENTER.

◆ **When the selected title is referred to by a Playlist**

Select "Close" as you are unable to delete an original title that is referred to by a Playlist.
If you want to delete the original title, first delete the Playlist title. Then, delete the original title.

6 Press ⬅/➡ to select "OK," then press ENTER.

The display asks for confirmation.
To return to the display for selecting titles, select "View All."

7 Press ⬅/➡ to select "OK," then press ENTER.

Hint

If you are using a DVD-RW (Video mode) or DVD+RW, you can erase a title using the Disc Map (*page 22*).

Erasing a section of a title (A-B Erase)

-RW VR

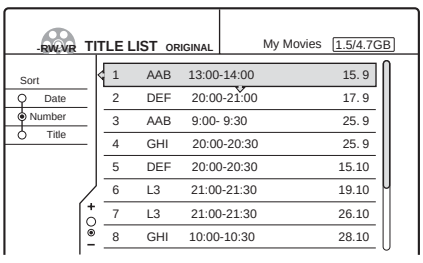
You can erase a section of a title using the sub-menu.

◆For original titles in a DVD-RW (VR mode):

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOL and select either "Original" or "Playlist" from the Tool menu to change the Title List, if necessary.



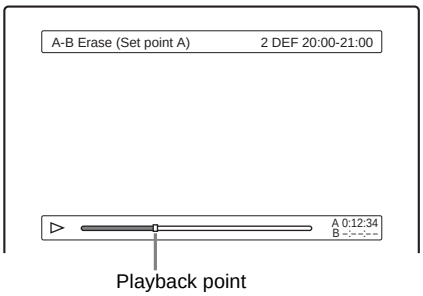
2 Press ⬆/⬇ to select the title, then press ENTER.

The sub-menu appears.

3 Press ⬆/⬇ to select "A-B Erase," then press ENTER.

The display for setting point A appears.

The selected title plays in the background. The slider indicates the current playback point.



◆ **When the selected title is protected**

The display asks for confirmation.

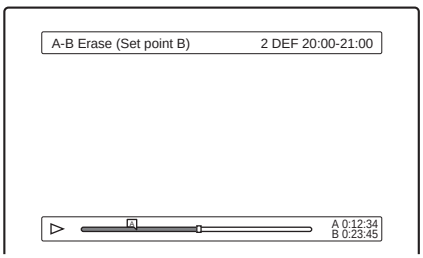
- To continue the procedure, press ⬅/➡ to select "Change."
 The protection display appears. Select "Off" by pressing ⬅/➡, then press ENTER.
- To cancel the procedure, select "Close" by pressing ⬅/➡, then press ENTER.

◆ **When the selected title is referred to by a Playlist**

Select "Close" as you are unable to delete an original title that is referred to by a Playlist.
If you want to delete a section of the original title, first delete the Playlist title. Then, delete the section.

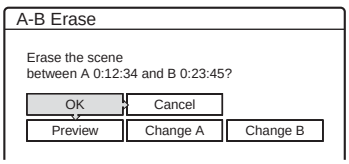
4 While watching the playback picture, set point A using ▷, ❚❚, and ◀◀/▶▶, then press ENTER.

The display for setting point B appears, and the title continues to play in the background.



5 While watching the playback picture, set point B using ▷, ❚❚, and ◀◀/▶▶, then press ENTER.

The display asks for confirmation.



To preview, select "Preview."
To reset either point A or B, select "Change A" or "Change B."

6 Press ⬅/⬆/⬇/➡ to select "OK," then press ENTER.

The scene is erased, and the display asks whether to erase another scene.
To continue, select "Yes" and repeat the steps above.

➡*continued*

7 **To exit, press ←/→ to select "No," then press ENTER.**
The display returns to the Title List menu.

Notes

- Images or sound may be momentarily interrupted at the point where you erase a section of a title.
- Sections shorter than five seconds may not be erased.

Creating chapters manually

-RW VR

You can manually insert a chapter mark at any point you like.

Press CHAPTER MARK during playback at the point where you want to divide the title into chapters.
Each time you press the button, "Marking…" appears on the screen and the scene to the left and right of the mark becomes a chapter.



To erase chapter marks

You can combine two chapters by erasing a chapter mark during playback.

1 **Press I◄◄ or ►►I to search for a chapter number.**

2 **Press CHAPTER ERASE while displaying the chapter you want to erase.**
The current playing chapter combines with the previous chapter.

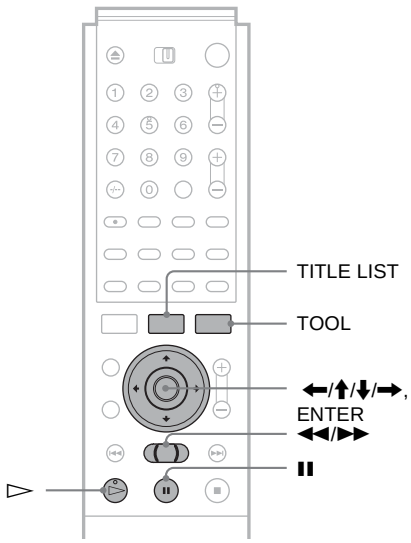
Notes

- Playback may momentarily stop when inserting a chapter mark.
- A message will appear when no more chapter marks can be added. In this case, you may not be able to record or edit the disc.

Advanced Editing (Playlist Edit)

This section explains how to create a Playlist, and then covers available edit functions for the created Playlist.
Playlist titles can be created from scenes that are selected original titles or other Playlist titles.
Since edits to the Playlist does not affect the original title, you can redo editing as many times as you like.
To create a Playlist title, you will do the following.

1.Select a title or titles for editing
↓
2."Capture" multiple scenes from the selected title(s)
↓
3.Confirm the scenes on the Scene List
↓
4.If necessary, edit the scenes on the Scene List
↓
5.Connect scenes to create a "Playlist" title

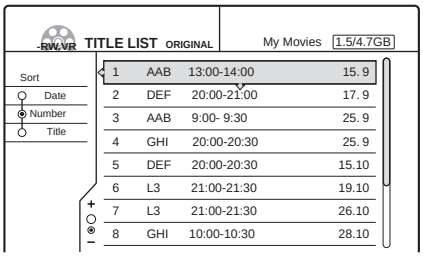


Creating a Playlist title from other titles

-RW VR

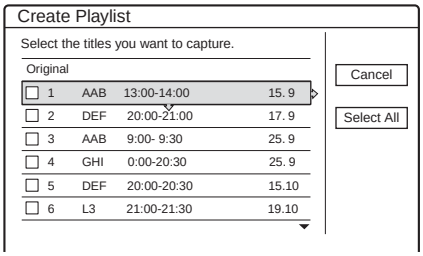
Collect your favourite scenes from original titles or other Playlist titles to create a new Playlist title. You can rearrange the order of the scenes or edit the scenes as well.

1 **Press TITLE LIST.**
The Title List (Original) menu or the Title List (Playlist) menu appears.
Example: The Title List (Original) menu.

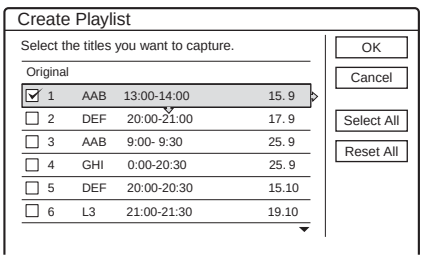


2 **Press TOOL.**
The Tool menu appears.

3 **Press ↑/↓ to select "Create Playlist," then press ENTER.**
The display for selecting titles appears.



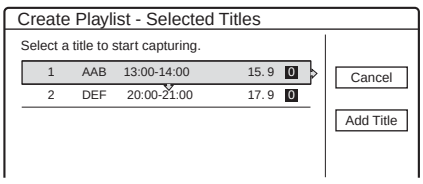
4 **Press ↑/↓ to select the title you want to include in the Playlist title, then press ENTER.**
A check mark appears in the check box next to the selected title.
To clear the check mark, press ENTER again.



To select all of the titles, select "Select All."

5 **Repeat step 4 when adding more titles.**
To go to the next page, press ↓.
To clear all the check marks, select "Reset All."

6 **Press ←/→ to select "OK," then press ENTER.**
The list of selected titles appears.

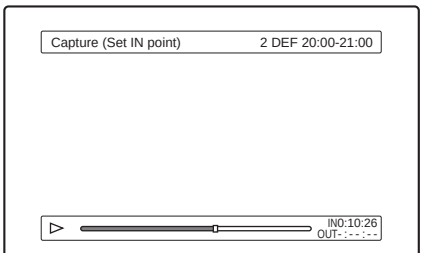


To add another title, select "Add Title."

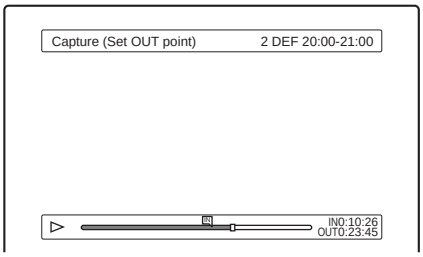
7 **Press ↑/↓ to select one of the titles, then press ENTER.**
The sub-menu appears.

◆ **To add the entire title as one scene to the Playlist title**
Select "Capture All" and go to step 14.

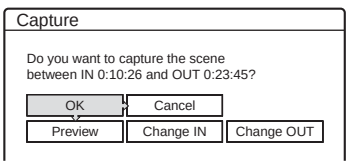
8 **Press ↑/↓ to select "Capture," then press ENTER.**
The display for setting the start point (IN) appears.
The selected title starts to play in the background.



9 **While watching the playback picture, select the start of the scene using ▷, II, and ◀◀/▶▶, then press ENTER.**
The display for setting the end point (OUT) appears, and the title continues to play in the background.

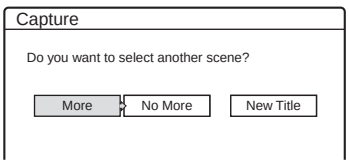


10 **While watching the playback picture, select the end point of the scene using ▷, II, and ◀◀/▶▶, then press ENTER.**
The display asks for confirmation.



To view the selected scene, select "Preview."
To reset either the IN or OUT point, select "Change IN" or "Change OUT."

11 **Press ←/→ to select "OK," then press ENTER.**
The selected portion is captured as a scene, and the display asks whether to continue scene capture.



→continued

12 Press ←/→ to select an option on the screen, then press ENTER.

To capture a scene from the same title, select "More," and repeat the steps above.
To capture a scene from another title, select "New Title," and repeat the steps above.

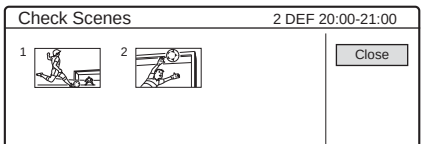
13 To end scene capture, press ←/→ to select "No More" and press ENTER.

The display returns to the list of selected titles.

◆ **To check the captured scenes in a single title**

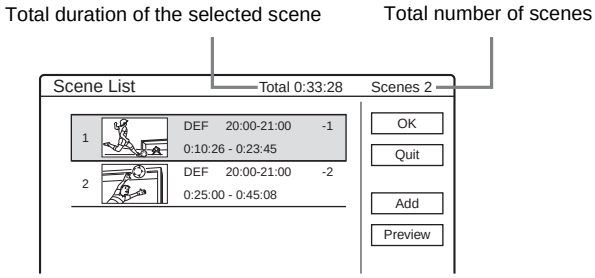
① **Press ↑/↓ to select a title from the list of selected titles, then press ENTER.**
The sub-menu appears.

② **Press ↑/↓ to select "Check Scenes," then press ENTER.**
The thumbnail pictures of the captured scenes within the title appear.



14 Press ←/↑/↓/→ to select "Scene List," then press ENTER.

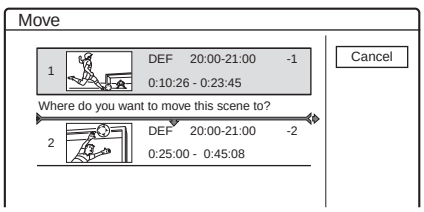
The Scene List menu appears with all of the selected scenes.



◆ **To change the scene order (Move)**

① **Press ↑/↓ to select the scene you want to move, then press ENTER.**
The sub-menu appears.

② **Press ↑/↓ to select "Move," then press ENTER.**
The display for selecting the insertion point appears.



③ **Press ↑/↓ to select the insertion point, then press ENTER.**
The scene moves to its new position, and the display returns to the Scene List menu.

◆ **To erase the scene (Erase)**

① **Press ↑/↓ to select the scene you want to erase, then press ENTER.**
The sub-menu appears.

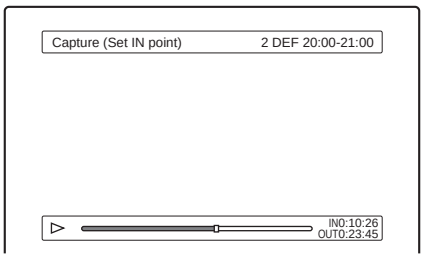
② **Press ↑/↓ to select "Erase," then press ENTER.**

③ **When the display asks for confirmation, press ←/→ to select "OK," then press ENTER.**

◆ **To change the scene contents (Change IN/ Change OUT)**

① **Press ↑/↓ to select the scene you want to change, then press ENTER.**
The sub-menu appears.

② **Press ↑/↓ to select "Change IN," then press ENTER.**
The display for setting the IN point appears.



③ **Repeat steps 9 to 13.**
To reset the OUT point, select "Change OUT," then repeat steps 10 to 13.
The display returns to the Scene List menu.

◆ **To add another scene**

Press ←/↑/↓/→ to select "Add," then press ENTER. Repeat steps above.

◆ **To preview the entire Playlist title**

Press ←/↑/↓/→ to select "Preview," then press ENTER. The captured scenes start to play in the listed order. When the playback is finished, the display returns to the Scene List menu.

15 Press ←/→ to select "OK," then press ENTER.

The scenes are connected to create a new Playlist title, and the display for entering the title name appears.

◆ **To enter a new name**

Select "Enter" and follow the explanations on *page 18.*

◆ **To use the default name**

Press ←/→ to select "OK," then press ENTER. A new Title List menu appears with the title of the entered name.

Hint

When a Playlist title is created, the "IN" point and "OUT" point will become chapter marks, and each scene will become a chapter.

Note

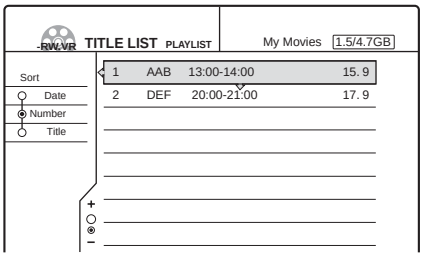
The picture may pause when the edited scene is played.

Moving a Playlist title (Move)

-RW VR

You can change the Playlist title order within the Title List (Playlist).

1 Press TITLE LIST.
The Title List menu appears.
If the Title List (Original) menu appears, press TOOL, and select “Playlist” from the Tool menu.



2 Press ← to select the sort buttons.

3 Press ↑/↓ to select “Number,” then press ENTER.

4 Press ↑/↓ to select the title you want to move, then press ENTER.
The sub-menu appears.

5 Press ↑/↓ to select “Move,” then press ENTER.
The display for moving titles appears.

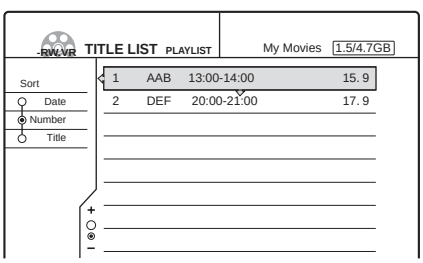
6 Press ↑/↓ to select the new location, then press ENTER.
The title moves to its new location, and the display returns to the new Title List (Playlist) menu.

Dividing a Playlist title (Divide)

-RW VR

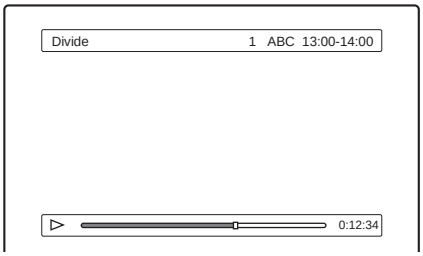
You can divide a Playlist title into two Playlist titles. For example, if a Playlist title contains two football matches, you can divide the title where the first match ends.

1 Press TITLE LIST.
The Title List menu appears.
If the Title List (Original) menu appears, press TOOL, and select “Playlist” from the Tool menu.



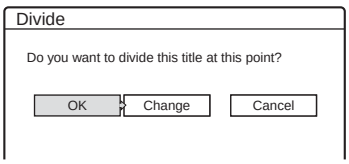
2 Press ↑/↓ to select the title, then press ENTER.
The sub-menu appears.

3 Press ↑/↓ to select “Divide” then press ENTER.
The display setting the dividing point appears.
The selected title starts to play in the background.



4 While watching the picture on the screen, move the playback point using ▷, ❚❚, and ◀◀/▶▶.

5 Press ENTER at the point where you want to divide the title.
The display asks for confirmation.



To change the dividing point, select “Change.”

6 Press ←/→ to select “OK,” then press ENTER.
The display asks if you want to enter a new name.

◆ **To enter a new name**
Select “Yes” and follow the explanations on *page 18*.

◆ **To use the same name as before**
Select “No.”

7 Press ←/→ to select “Yes” or “No,” then press ENTER.
The title is divided and the Title List menu appears with the two divided titles.

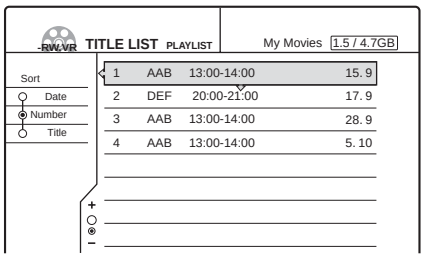
→*continued*

Combining multiple Playlist titles (Combine)

-RW VR

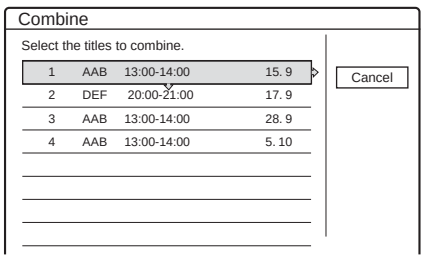
You can add new contents to an existing Playlist title by combining the title with other Playlist titles.

1 Press TITLE LIST.
The Title List menu appears.
If the Title List (Original) menu appears, press TOOL, and select “Playlist” from the Tool menu.

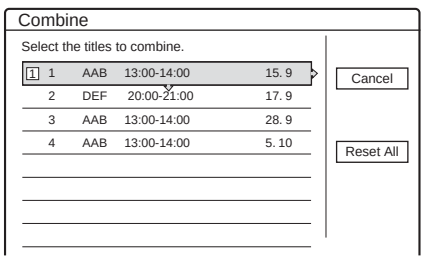


2 Press TOOL.
The Tool menu appears.

3 Press ↑/↓ to select “Combine,” then press ENTER.
The display for selecting titles appears.



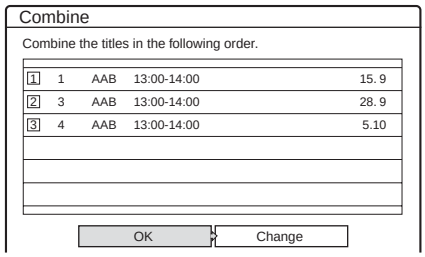
4 Press ↑/↓ to select the title, then press ENTER.
A number appears next to the selected title, indicating the order in which you selected the title.



To cancel the selection, move the cursor to the selected title by pressing ↑/↓, then press ENTER again.

5 Repeat step 4 to select all the titles you want to combine.
To list the titles to be combined, select “List.”
To cancel all of the selections, select “Reset All.”

6 Press → to select “OK,” then press ENTER.
The display asks for confirmation.



To change the selection, select “Change.”

7 Press ←/→ to select “OK,” then press ENTER.
The display for selecting a title name from among the selected titles appears.
To enter a new name, select “Enter Text,” and follow the explanations on *page 18*.

8 Press ↑/↓ to select a name, then press ENTER.
The titles are combined, and the display returns to the Title List menu.

Additional Playlist edit functions

-RW VR

You can also do the following edits for Playlists.
– Label a Playlist title (*page 51*).
– Erase a Playlist title (*page 52*).
– Erase multiple Playlist titles (*page 52*).
– Erase a section of a Playlist title (A-B Erase) (*page 53*).
– Create chapters in a title (*page 54*).

To perform these edits, press TITLE LIST * and then follow the same steps for these functions explained in *“Basic Editing”* (*page 51*).

* If the Title List (Original) menu appears, press TOOL and select “Playlist” from the Tool menu.

Note

Erasing Playlist titles will not free up disc space.

Connecting a Digital Video Camera or Other Equipment

You can record from connected equipment, such as a digital video camera.

- *Before Recording/Editing* *.page 59*
- *Recording an Entire DV/Digital8 Format Tape (ONE TOUCH DUB)* -RW VR -RW VIDEO +RW −R *.page 61*
- *Program Edit* -RW VR -RW VIDEO +RW −R *.page 62*
- *Advanced Program Edit* -RW VR *.page 64*
- *Re-editing the programs in the DV Edit List* -RW VR *.page 67*
- *Creating a Copy of the Edited Contents (Copy Dubbing)* -RW VR -RW VIDEO +RW −R *.page 69*
- *Recording From Equipment Connected to the LINE IN Jacks* -RW VR -RW VIDEO +RW −R *.page 71*

Before Recording/Editing

The recorder has a DV IN jack that inputs digital signals, and LINE jacks that input/output analogue signals.
The DV IN jack on this recorder conforms to the i.LINK standard. You can connect other equipment that has an i.LINK (DV) jack although it is for input only. If you want to have the recorder to output signals, use the LINE jacks. For more information, *see "About i.LINK"* (*page 90)*.
If you plan to do additional editing on a disc after the initial dub, use the DV IN jack and record on a DVD-RW in VR mode.

◆When recording from the DV IN jack
See "Preparing for recording using the DV IN jack" below.

◆When recording from the LINE IN jacks
See "Recording From Equipment Connected to the LINE IN Jacks" (page 71).

Preparing for recording using the DV IN jack

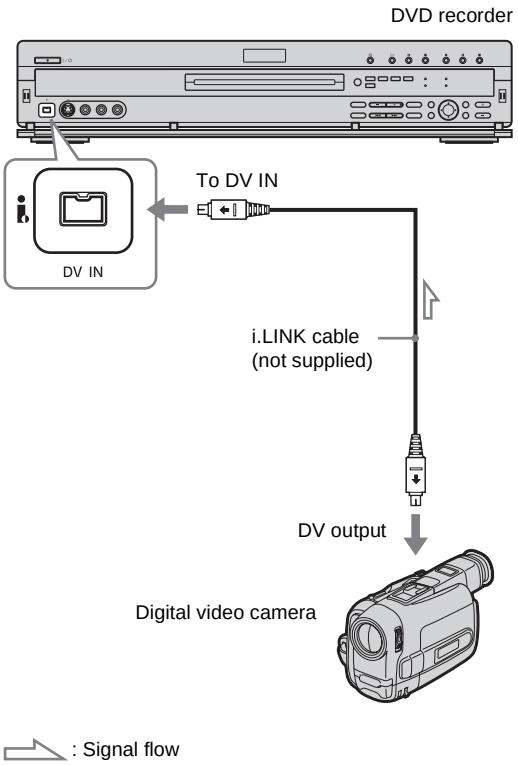
You can connect a digital video camera to the DV IN jack on the recorder to record or edit from a DV/Digital8 format tape. Operation is smooth because the recorder will fast forward and rewind the tape for you – you do not need to operate your digital video camera. Do the following to start using the DV Edit functions of this recorder.
See also the instruction manual supplied with the digital video camera before connecting.

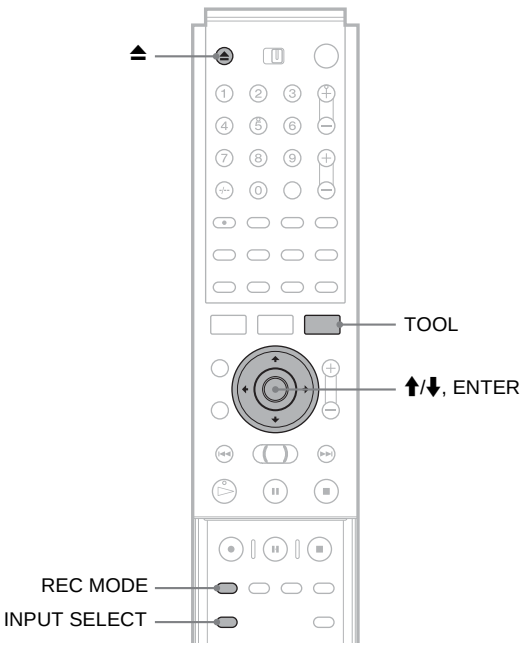
Notes

- Only DVC-SD format signals can be input to the DV IN jack on this recorder. Do not connect a MICRO MV format digital video camera even if it has an i.LINK jack.
- Turn off the PDC/VPS channel scan function when dubbing or editing (*page 26)*.

➡*continued*

Hookups





1 **Turn on your TV and this recorder, then set the TV to the connected channel ("VIDEO" etc.).**

2 **Press ⏏, and place a recordable disc on the tray.**
If you plan to do additional editing, use a DVD-RW.

3 **Press ⏏ to close the disc tray.**
Wait until "LOAD" disappears from the front panel display.
If you inserted a blank DVD-RW in step 2, format the disc in VR mode.

4 **Insert the source DV/Digital8 format tape into the digital video camera.**
For the recorder to record or edit, the digital video camera must be set to video playback mode.

5 **Press INPUT SELECT repeatedly to select "DV."**
The front panel display changes as follows.

Programme position → L1 → L2 → L3 → L4 → DV

6 **Press REC MODE repeatedly to select the recording mode.**
The recording mode changes as follows:

HQ → HSP → SP → LP → EP → SLP

7 **Select the audio input for the digital video camera using the Tool menu.**

① **Press TOOL.**

② **Press /▼ to select "DV Audio Input," then press ENTER.**

③ **Press /▼ to select the item, then press ENTER.**
- Stereo1 (default)
- MIX (both stereo 1 and stereo 2)
- Stereo2

You are ready to start recording.

Hint
You can adjust the settings for the recording picture before recording. *See "Adjusting the Recording Picture Quality and Size" (page 30).*

Notes
- You cannot connect more than two pieces of digital video equipment to the recorder.
- Depending on the digital video equipment, you may not be able to control the equipment.
- You cannot control the recorder using another device or another recorder of the same model.
- You cannot record date, time or the contents of the cassette memory onto the disc.
- If you record from a DV/Digital8 format tape with a sound track that is recorded in multiple sampling frequencies (48 kHz, 44.1 kHz, or 32 kHz), no sound will be output when playing back the switched point on the disc.
- In order to use this recorder's Auto Chaptering feature, be sure to correctly set the clock on your digital video camera before shooting.
- The recorded picture may be momentarily affected if the picture size of the source image changes, or if there is nothing recorded on the tape.

The following functions are available

◆One Touch Dub *(page 61)*
Records the entire contents of a DV/Digital8 format tape to a disc of your choice with a single touch of the ONE TOUCH DUB button.

◆Program Edit *(page 62)*
Allows you to select scenes from a DV/Digital8 format tape, and then automatically records the selected scenes to a disc of your choice.

◆Advanced Program Edit *(page 64)*
The recorder copies the entire contents of a DV/Digital8 format tape to a DVD-RW in VR mode, whereupon the contents are automatically divided into chapters. The chapters are displayed as scenes in a scene list where you can instantly delete or rearrange the scenes at will. After you have selected the scenes, you can either create a Playlist of the selected scenes in the DVD-RW (VR mode), or you can change discs and record the scenes to another disc of your choice.

◆Re-editing the DV Edit List (DVD-RW in VR mode only) *(page 67)*
Each time you make a One Touch Dub or Advanced Program Edit using a DVD-RW (VR mode), the start and stop points of the selected scenes (called a "program") are saved in a DV Edit List. You can make additional changes to this "program."

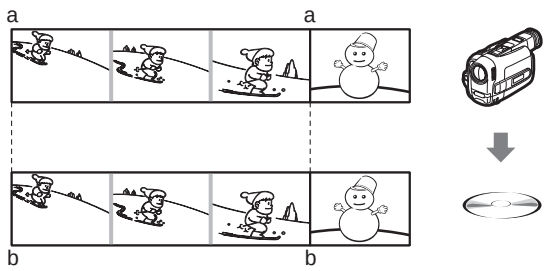
◆Copy Dubbing *(page 69)*
Allows you to make copies of the programs contained in the DV Edit List to a disc of your choice.

Recording an Entire DV/ Digital8 Format Tape (ONE TOUCH DUB)

−RW VR −RW VIDEO +RW −R

You can record the entire contents of a DV/Digital8 format tape onto a disc with a single press of the ONE TOUCH DUB button. The recorder controls the digital video camera for the whole process, and completes the recording.

Example for all disc types



When using a DVD-RW (VR mode), chapter marks [b] are marked where the recordings stop and start on the tape [a].
For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup (*page 79*).

Follow steps 1 to 7 of *"Preparing for recording using the DV IN jack" (page 59)*, then press ONE TOUCH DUB on the front panel of the recorder.

The recorder rewinds the tape and then starts recording the tape contents.
When the recording is finished, the recorder rewinds the tape in the digital video camera, and turns off.

To stop during recording

Press ■ REC STOP.

Hints

- The date and time of the recording made with your digital video camera is assigned as the program name in the DV Edit List (*page 67*) (example: DV11.10.2002 13:30 – 12.10.2002 16:46).
- If you set "Finalize Disc" to "Auto" in Features Setup *(page 81)*, the recorded disc will automatically be finalized after recording is finished.

Notes

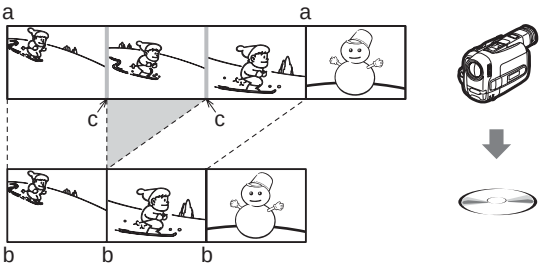
- The recorder does not start One Touch Dub when you set "Add to Edit List" to "On" (default) in Features Setup (*page 81*) and there are already twenty programs on the recorder. In this case, the recorder beeps and the front panel display flashes. Delete unnecessary programs from the DV Edit List menu *(page 67)* and repeat the steps above.
- When a blank space on the tape continues for more than five minutes, One Touch Dub ends automatically.
- This function may not work with certain digital video cameras. In this case, follow the instructions of "*Recording From Equipment Connected to the LINE IN Jacks*" (*page 71*).
- In order for a One Touch Dub recording to be added to the DV Edit List, "Add to Edit List" in Features Setup must be set to "On" (default) *(page 81)*.

Program Edit

-RW VR -RW VIDEO +RW −R

You can select scenes from a DV/Digital8 format tape, and then automatically record selected scenes to a disc of your choice.

Example for DVD-RWs (VR mode)



When using a DVD-RW (VR mode), chapter marks [b] are marked where the recordings stop and start on the tape [a]. Chapter marks are also inserted at the IN and OUT points of the selected scenes [c].
For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup (*page 79)*.

To use this function, you will do the following:

Connect your digital video camera and prepare for recording

↓

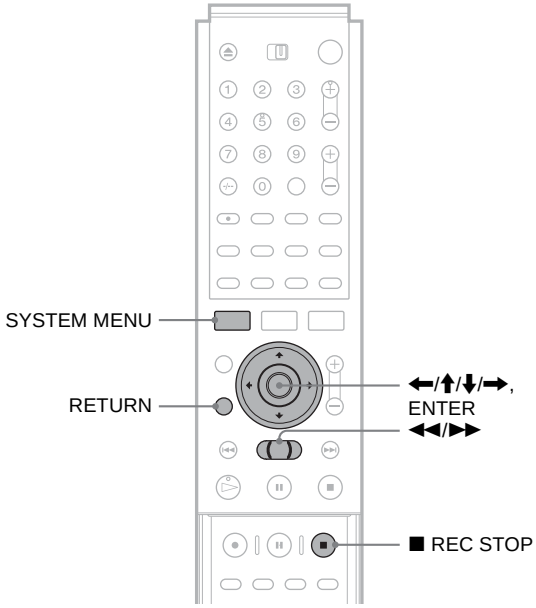
Select and edit the scenes you want to dub

Using the recorder's remote control, you will fast forward or rewind the tape to select the scenes. At this point, the selected scenes are not copied to the disc. The recorder only remembers the IN and OUT points of the scenes that you selected for dubbing. You can also reset, erase, or change the order of the scenes.

↓

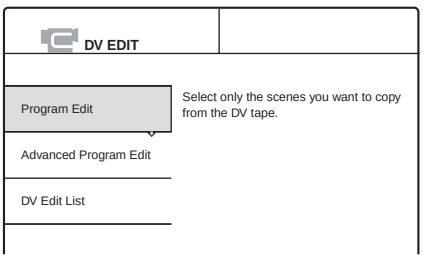
Dub the selected scenes to a disc

After you have selected the scenes, the recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice.

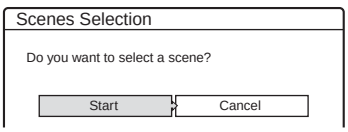


1 **Follow steps 1 to 7 of "*Preparing for recording using the DV IN jack" (page 59)*, then press SYSTEM MENU.**

2 **Press ↑/↓ to select "DV EDIT," then press ENTER.**
The DV Edit menu appears.



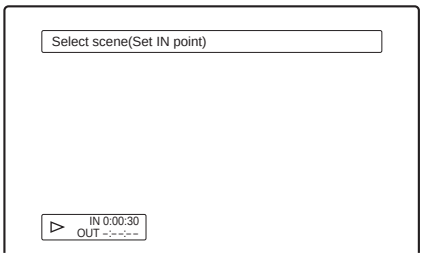
3 **Press ↑/↓ to select "Program Edit," then press ENTER.**
The display asks whether to start selecting scenes.



◆ **If you have previously saved a program**
The display asks whether to edit an existing program or to create a new program. To resume editing the existing program, select "Saved Data."

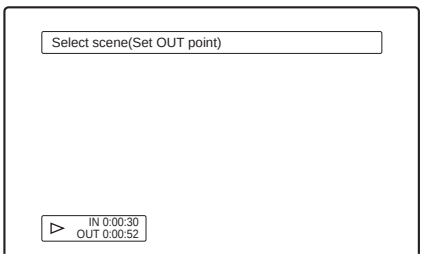
4 **Press ←/→ to select "Start," then press ENTER.**
The display for setting the IN point (start of the scene on the tape) appears.

5 **Press ▷ to start playback of the tape in your digital video camera.**
The scene starts to play in the background.



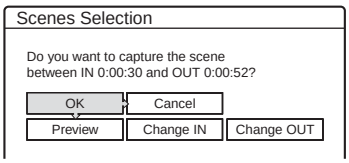
6 While watching the playback picture, search for the IN point by pressing ◀◀ or ▶▶, then press ENTER.

The display for setting the OUT point (end of the scene on the tape) appears. The scene starts to play in the background from the IN point.



7 While watching the playback picture, search for the OUT point by pressing ◀◀ or ▶▶, then press ENTER.

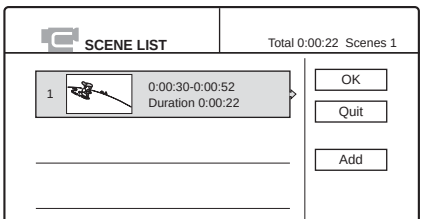
The display asks whether to add the selected scene to the Scene List menu.



To preview the scene, select “Preview.”
To reset either the IN or OUT point, select “Change IN” or “Change OUT.” Repeat from step 5.

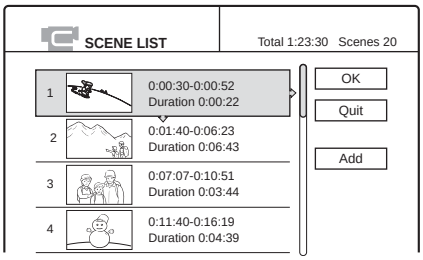
8 Press ←/↑/↓/→ to select “OK,” then press ENTER.

A new Scene List menu appears with the selected scene.



9 Press ←/↑/↓/→ to select “Add” and press ENTER. Then repeat steps 5 to 9 to select all the scenes you want to include.

You can add up to 50 scenes to a title.



To edit the Scene List, select a scene by pressing ←/↑/↓/→, and then press ENTER. When the sub-menu appears, select an edit option you want to apply to the scene.

◆ **To erase the scene**

① **Press ↑/↓ to select “Erase,” then press ENTER.**

② **When the display asks for confirmation, press ←/→ to select “OK,” then press ENTER.**

◆ **To move the scene**

① **Press ↑/↓ to select “Move,” then press ENTER.**
The display for selecting the scene insertion point appears.

② **Press ↑/↓ to select the point, then press ENTER.**
The scene moves to the selected location.

◆ **To reset the start or end of the scene**

Press ↑/↓ to select “Change IN” or “Change OUT,” then press ENTER.

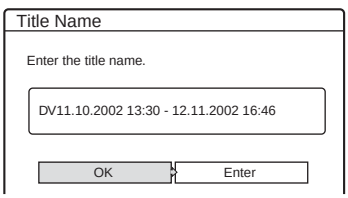
◆ **To preview the scene**

Press ↑/↓ to select “Preview,” then press ENTER.

To cancel, press ←/↑/↓/→ to select “Quit,” then press ENTER.

10 When you finish editing the Scene List, press ←/↑/↓/→ to select “OK,” then press ENTER.

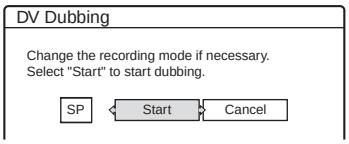
The display for entering a title name appears.



To enter a new name, select “Enter,” and follow the explanations on *page 18*.

11 To use the default name, press ←/→ to select “OK,” then press ENTER.

The default title name is fixed, and the display asks whether to start recording. If you want to change the recording mode, press ←/→ to move the cursor, then press ↑/↓ to select the mode.



→*continued*

12 Press ←/→ to select "Start," then press ENTER.

The recorder starts recording the tape contents as programmed.

To stop during recording, press ■ REC STOP.

13 When the recording is finished, press ENTER to select "Close."

The display returns to the DV Edit menu.

14 Press RETURN repeatedly to turn off the display.

Notes

- The disc may not be recorded as programmed if the tape's time code is not sequential or there are blanks between the recordings on the tape. In this case, follow the instructions of *"Recording From Equipment Connected to the LINE IN Jacks" (page 71)*.
- Start and end point of a program may be different from what you have set if the source DV/Digital8 format tape is in any of the following conditions:

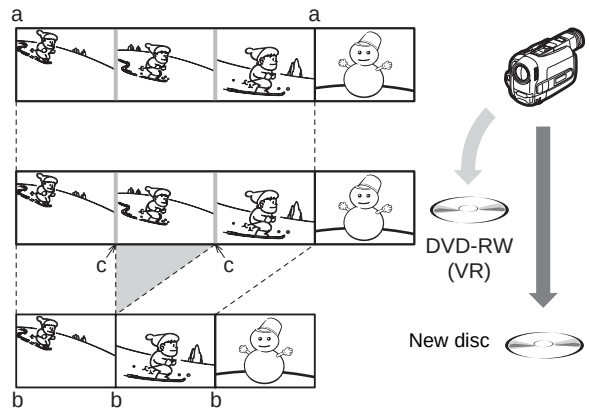
– Recording mode was changed during the recording.
– There is a blank space in the recorded portion.

- You cannot set a scene shorter than one second.
- This function may not work with certain digital video cameras. In this case, follow the instructions of *"Recording From Equipment Connected to the LINE IN Jacks" (page 71)*.

Advanced Program Edit

-RW VR

You can quickly edit a DV/Digital8 format tape by first copying the entire contents of the tape to a DVD-RW (VR mode) and then select the scenes you want from the disc. After you select the scenes, you can change discs and record the scenes to another disc of your choice. If necessary, you can also create a Playlist title of the selected scenes in the DVD-RW (VR mode).



When dubbing to a DVD-RW (VR mode), chapter marks [b] are marked where the recordings stop and start on the tape [a]. Chapter marks are also inserted at the IN and OUT points of the selected scenes [c].

To use this function, you will do the following:

Connect your digital video camera and prepare for recording

↓

Record the entire contents of the DV/Digital8 tape to a DVD-RW (VR mode)

↓

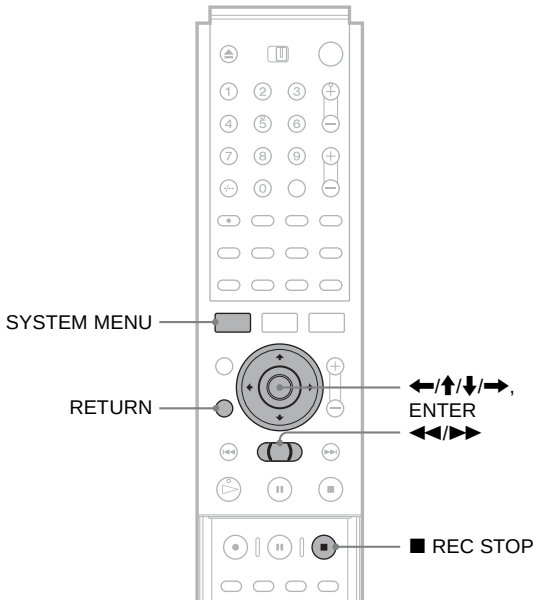
Select and edit the scenes you want to dub

Taking advantage of the disc's quick accessibility, you will select the scenes you want from the inserted DVD-RW. You do not have to fast forward or rewind the tape as explained in *"Program Edit" (page 62)*. You can also reset, erase, or change the order of the scenes.

↓

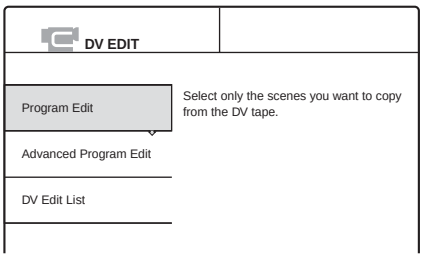
Dub the scenes to another disc

After you have selected the scenes, you can dub the selected scenes to another disc of your choice. Or, you can create a Playlist of the selected scenes.

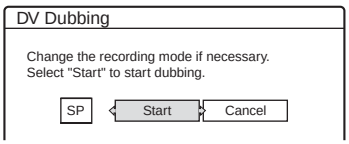


1 **Follow steps 1 to 7 of "*Preparing for recording using the DV IN jack" (page 59)*, then press SYSTEM MENU.**
Insert a blank DVD-RW into the recorder and format it in VR mode.

2 **Press ↑/↓ to select "DV EDIT," then press ENTER.**
The DV Edit menu appears.



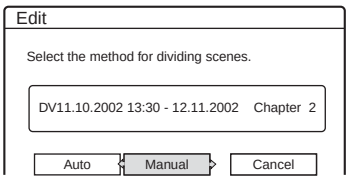
3 **Press ↑/↓ to select "Advanced Program Edit," then press ENTER.**
The display asks whether to start recording.



If you want to change the recording mode, press ←/→ to move the cursor, then press ↑/↓ to select the mode.

4 **Press ←/→ to select "Start," then press ENTER.**
The recorder starts recording the tape contents.
To stop during recording, press ■ REC STOP.

When recording is finished, the display asks if you want to create scenes within the generated program automatically or manually, or quit editing.



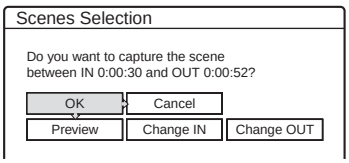
◆ **To create scenes automatically**
Press ←/→ to select "Auto," then press ENTER. The recorder divides the generated program into scenes, and the Scene List menu appears.

◆ **To create scenes manually**

① **Press ←/→ to select "Manual," then press ENTER.**
The display for setting the IN point appears. The scene starts to play in the background.

② **While watching the playback picture, press ◀◀ or ▶▶ to search for the IN point, then press ENTER.**
The IN point is set, and the display for setting the OUT point (end of the scene) appears.

③ **While watching the playback picture, press ◀◀ or ▶▶ to search for the OUT point, then press ENTER.**
The OUT point is set, and the display asks whether to add the selected scene to the Scene List menu.



- To preview the scene, select "Preview."
- To reset either the IN or OUT point, select "Change IN" or "Change OUT."

④ **Press ←/↑/↓/→ to select "OK," then press ENTER.**
A new Scene List menu appears with the selected scene.

⑤ **Press ←/↑/↓/→ to select "Add," then press ENTER.**
The display for selecting the scene insertion point appears.

⑥ **Press ↑/↓ to select the insertion point in the Scene List, then press ENTER.**
The display for setting the IN point (start of the scene) appears.

⑦ **Repeat steps ② to ⑥ to create all the scenes you want to add to the Scene List.**
You can add up to 50 scenes.

◆ **To quit editing**
Press ←/→ to select "Cancel," then press ENTER.

5 **To edit the Scene List, press ←/↑/↓/→ to select a scene in the Scene List menu and press ENTER.**
When the sub-menu appears, select an edit option you want to apply to the scene.

→*continued*

◆ **To erase the scene**

① **Press ↑/↓ to select "Erase," then press ENTER.**

② **When the display asks for confirmation, press ←/→ to select "OK," then press ENTER.**

◆ **To move the scene**

① **Press ↑/↓ to select "Move," then press ENTER.**
The display for selecting the scene insertion point appears.

② **Press ↑/↓ to select the point, then press ENTER.**
The scene moves to the selected location.

◆ **To reset the start or end of the scene**

Press ↑/↓ to select "Change IN" or "Change OUT," then press ENTER.

◆ **To preview the scene**

Press ↑/↓ to select "Preview," then press ENTER.

To cancel, press ←/↑/↓/→ to select "Quit," then press ENTER.

6 When you finish creating the Scene List, press ←/↑/↓/→ to select "OK," then press ENTER.
The edited program is saved, and the display asks if you want to create a Playlist title.
If you select "No," the display returns to the DV Edit menu. Go to step 9.

7 Press ←/→ to select "Yes," then press ENTER.
The display for entering a Playlist title name appears.
To enter a new name, select "Enter," and follow the explanations on *page 18*.

8 To use the default name, press ←/→ to select "OK," then press ENTER.
A Playlist title of the default title name is created on the same disc, and the display returns to the DV Edit menu.
You now have a disc containing both the entire contents of the DV/Digital8 format tape and a Playlist of the selected scenes.
To edit the Playlist title, *see "Advanced Editing (Playlist Edit)"* (*page 54*).

9 Dub the selected scenes to a disc.
Make copies of the selected scenes to a disc of your choice. *Go to step 3 of "Creating a Copy of the Edited Contents (Copy Dubbing)" (page 69).*

Notes

- The disc may not be recorded as programmed if the tape's time code is not sequential or there are blanks between the recordings on the tape. In this case, follow the instructions of "*Recording From Equipment Connected to the LINE IN Jacks*" (*page 71*).
- You cannot set a scene to be shorter than one second.
- Start and end point of a program may be different from what you have set if the source DV/Digital8 format tape is in any of the following conditions:

– Recording mode was changed during the recording.
– There is a blank space in the recorded portion.

- This function may not work with certain digital video cameras. In this case, follow the instructions of *"Recording From Equipment Connected to the LINE IN Jacks" (page 71)*.

Re-editing the programs in the DV Edit List

-RW VR

Each time you make a One Touch Dub or Advanced Program Edit using a DVD-RW (VR mode), the start and stop points of the selected scenes (called a “program”) are saved in a DV Edit List. You can make additional changes to this “program” by resetting, erasing, or changing the order of the scenes. You can then dub the re-edited program to a disc of your choice.

To use this function, you will do the following:

Connect your digital video camera and prepare for editing

Be sure to use the original DV/Digital8 format tape and the DVD-RW (VR mode) that corresponds to the program in the DV Edit List.

↓

Select a program from the DV Edit List

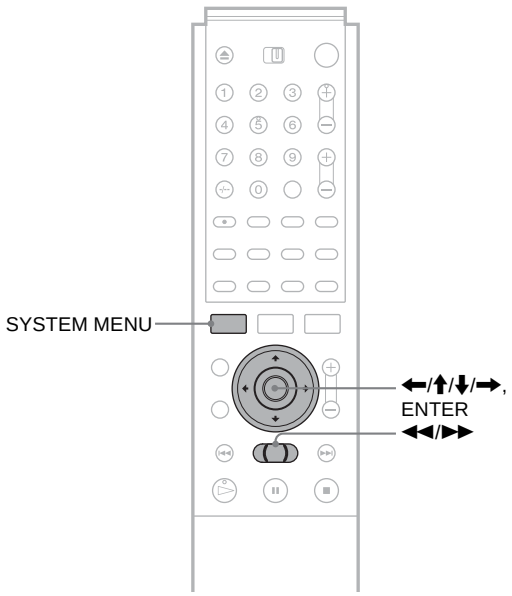
↓

Edit the program in the DV Edit List

↓

Dub the selected scenes to a disc

The recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice.

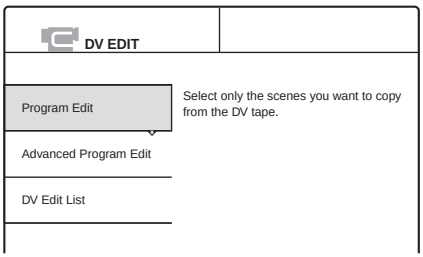


1 Follow steps 1 to 4 of “*Preparing for recording using the DV IN jack*” *(page 59)*, then press SYSTEM MENU.

Be sure to use the original DV/Digital8 format tape and the DVD-RW (VR mode) that corresponds to the program in the DV Edit List.

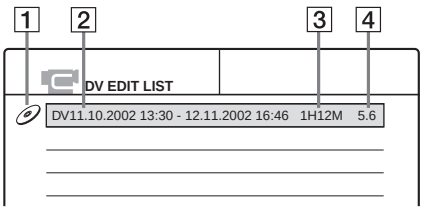
2 Press ↑/↓ to select “DV EDIT,” then press ENTER.

The DV Edit menu appears.



3 Press ↑/↓ to select “DV Edit List,” then press ENTER.

The DV Edit List menu appears.
A disc mark will appear next to the program that corresponds to the inserted disc. You can only edit the programs that display a disc mark.



1 Disc mark

2 Program name

3 Total playing time

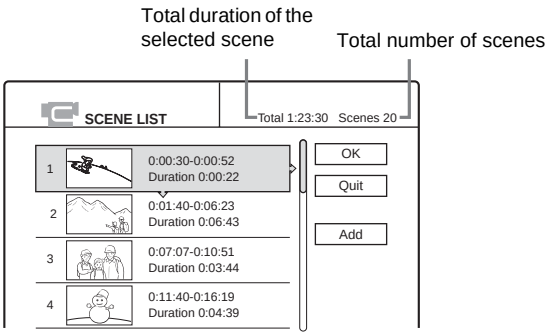
4 Date of editing or recording

4 Press ↑/↓ to select the program you want to edit, then press ENTER.

The sub-menu appears.

5 Press ↑/↓ to select “Edit,” then press ENTER.

The Scene List menu appears with all the scenes the program contains.



◆ **To add a new scene to the Scene List**

① **Press ←/↑/↓/→ to select “Add,” then press ENTER.**

The display for selecting the scene insertion point appears.

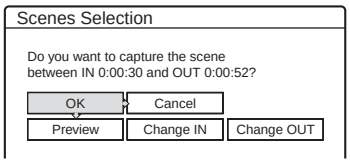
② **Press ↑/↓ to select the insertion point in the Scene List, then press ENTER.**

The display for setting the IN point (start of the scene) appears.

→*continued*

③ **While watching the playback picture, press ◀◀ or ▶▶ to search for the IN point, then press ENTER.**
The IN point is set, and the display for setting the OUT point (end of the scene) appears.

④ **While watching the playback picture, press ◀◀ or ▶▶ to search for the OUT point, then press ENTER.**
The OUT point is set, and the display asks whether to add the selected scene to the Scene List menu.



- To preview the scene, select “Preview.”
- To reset either the IN or OUT point, select “Change IN” or “Change OUT.”

⑤ **Press ←/↑/↓/→ to select “OK,” then press ENTER.**
A new Scene List menu appears with the selected scene. To add another scene, repeat from step ①.

◆ **If you select a program that contains no scenes**

The display asks whether to generate scenes within the selected program.
To generate scenes automatically, press ←/→ to select “Auto,” then press ENTER.
Scenes are generated and a new Scene List menu appears.
To capture scenes manually, select “Manual,” then press ENTER. The display for adding a scene appears. Follow steps ③ to ⑤ above.

6 **Press ↑/↓ to select the scene you want to edit, then press ENTER.**
The sub-menu appears.

7 **Press ↑/↓ to select the edit option you want to apply to the scene, then press ENTER.**

◆ **To erase the scene**

① **Press ↑/↓ to select “Erase,” then press ENTER.**

② **When the display asks for confirmation, press ←/→ to select “OK,” then press ENTER.**

◆ **To move the scene**

① **Press ↑/↓ to select “Move,” then press ENTER.**
The display for selecting the scene insertion point appears.

② **Press ↑/↓ to select the point, then press ENTER.**
The scene moves to the selected location.

◆ **To reset the start or end of the scene**

Press ↑/↓ to select “Change IN” or “Change OUT,” then press ENTER.

◆ **To preview the scene**

Press ↑/↓ to select “Preview,” then press ENTER.

To cancel, press ←/↑/↓/→ to select “Quit,” then press ENTER.

8 **When you finish editing the Scene List, press ←/↑/↓/→ to select “OK,” then press ENTER.**
The display asks if you want to make a Playlist title. If you select “No,” the edited program is saved, and the display returns to the DV Edit List. Note that the original program will be rewritten.

9 **Press ←/→ to select “Yes,” then press ENTER.**
The display for entering a Playlist title name appears. To enter a new name, select “Enter,” and follow the explanations on *page 18*.

10 **To use the default name, press ←/→ to select “OK,” then press ENTER.**
A Playlist title of the default title name is created on the same disc, and the display returns to the DV Edit List.
You now have a disc containing both the entire contents of the DV/Digital8 format tape and a Playlist of the selected scenes.
To edit the Playlist title, *see “Advanced Editing (Playlist Edit)” (page 54).*

11 **Dub the selected scenes to a disc.**
Make copies of the selected scenes to a disc of your choice. Go to step 4 of *“Creating a Copy of the Edited Contents (Copy Dubbing)” (page 69).*

To preview a program

After you edit a program, you can preview the changes you made.

1 **While the DV Edit List is displayed, press ↑/↓ to select the program, then press ENTER.**

2 **Press ↑/↓ to select “Preview,” from the sub-menu, then press ENTER.**

To create a Playlist title of the program

After you edit a program, you can create a Playlist title of the edited program. The Playlist will be created on the inserted DVD-RWs (VR mode).

1 **While the DV Edit List is displayed, press ↑/↓ to select the program, then press ENTER.**

2 **Press ↑/↓ to select “Make a Playlist,” from the sub-menu, then press ENTER.**
The display for entering a Playlist title name appears. To enter a new name, select “Enter,” and follow the explanations on *page 18*.

3 To use the default name, press ←/→ to select "OK," then press ENTER.

Notes

- You cannot set a scene to be shorter than one second.
- In order for a One Touch Dub recording to be added to the DV Edit List, "Add to Edit List" in Features Setup must be set to "On" *(page 81)*.

Creating a Copy of the Edited Contents (Copy Dubbing)

-RW VR -RW VIDEO +RW −R

You can make copies of the programs in the DV Edit List. Each time you dub a DV/Digital8 format tape, the start and stop points of the selected scenes (called a "program") are saved in a DV Edit List. You can select a program from the DV Edit List and use this information to copy the same contents onto another disc of your choice.

To use this function, you will do the following:

Connect your digital video camera and prepare for recording

Be sure to insert the original DV/Digital8 format tape that corresponds to the program in the DV Edit List.

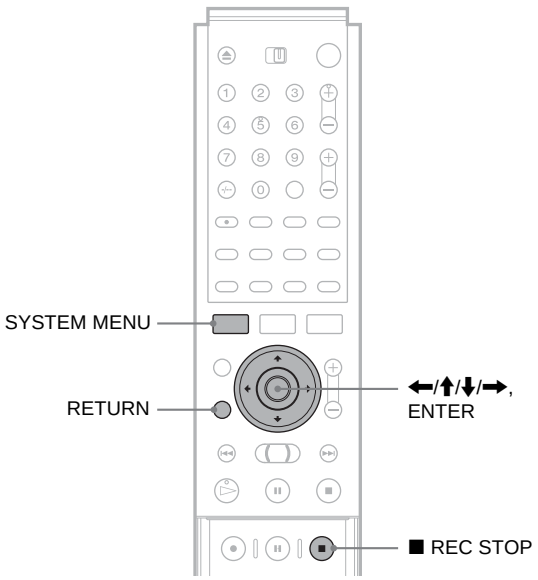
↓

Select a program from the DV Edit List

↓

Dub the selected scenes to a disc

The recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice. On a DVD-RW (VR mode), chapter marks are inserted at the start of each scene and where the recordings stop on the tape. For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup *(page 79)*.



1 Follow steps 1 to 7 of "*Preparing for recording using the DV IN jack" (page 59)*, then press SYSTEM MENU.

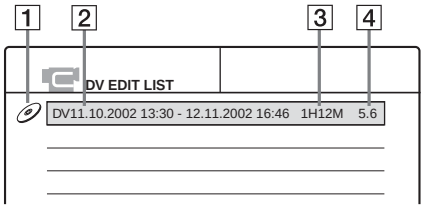
Be sure to insert the original DV/Digital8 format tape that corresponds to the program in the DV Edit List.

2 Press ↑/↓ to select "DV EDIT," then press ENTER.

The DV Edit menu appears.

→*continued*

3 Press ↑/↓ to select "DV Edit List," then press ENTER.
The DV Edit List menu appears.



1 Disc mark

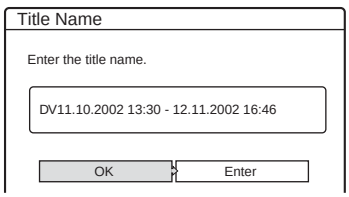
1 Program name

2 Total playing time

3 Date of editing or recording

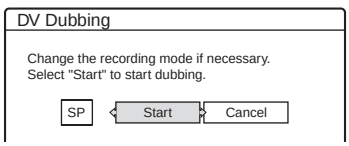
4 Press ↑/↓ to select the program you want to record on a disc, then press ENTER.
The sub-menu appears.

5 Press ↑/↓ to select "DV Dubbing," then press ENTER.
The display for entering a title name appears.



To enter a new name, select "Enter," and follow the explanations on *page 18*.

6 To use the default name, press ←/→ to select "OK," then press ENTER.
The default title name is fixed, and the display asks whether to start recording. If you want to change the recording mode, press ←/→ to move the cursor then press ↑/↓ to select the mode.



7 Press ←/→ to select "Start," then press ENTER.
The recorder starts recording the tape contents as programmed.
To stop during recording, press ■ REC STOP.

8 When the recording is finished, press ENTER to select "Close."
The display returns to the DV Edit List menu.

9 Press RETURN repeatedly to turn off the display.

To change the name of a program

1 While the DV Edit List is displayed, press ↑/↓ to select the program name you want to change, then press ENTER.

2 Press ↑/↓ to select "Rename" from the sub-menu, then press ENTER.
The display for entering the program name appears.

3 Enter a name by following the explanation on *page 18*.

To erase a program

1 While the DV Edit List is displayed, press ↑/↓ to select the program you want to erase, then press ENTER.

2 Press ↑/↓ to select "Erase" from the sub-menu, then press ENTER.

3 Press ←/→ to select "OK," then press ENTER.

Hints

- You can preview the scenes within the program title by selecting "Preview" in step 5.
- On a DVD-RW (VR mode), chapter marks are inserted at the start of each scene and where the recordings stop on the tape. For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup *(page 79)*.

Notes

- If you want to play the disc on other DVD equipment, finalize the disc (*page 34*).
- In order for a One Touch Dub recording to be added to the DV Edit List, "Add to Edit List" in Features Setup must be set to "On" *(page 81)*.
- Copy dubbing may not work if you have edited sections that do not contain any recorded material.
- This function may not work with certain digital video cameras. In this case, follow the instructions of *"Recording From Equipment Connected to the LINE IN Jacks" (page 71)*.

Recording From Equipment Connected to the LINE IN Jacks

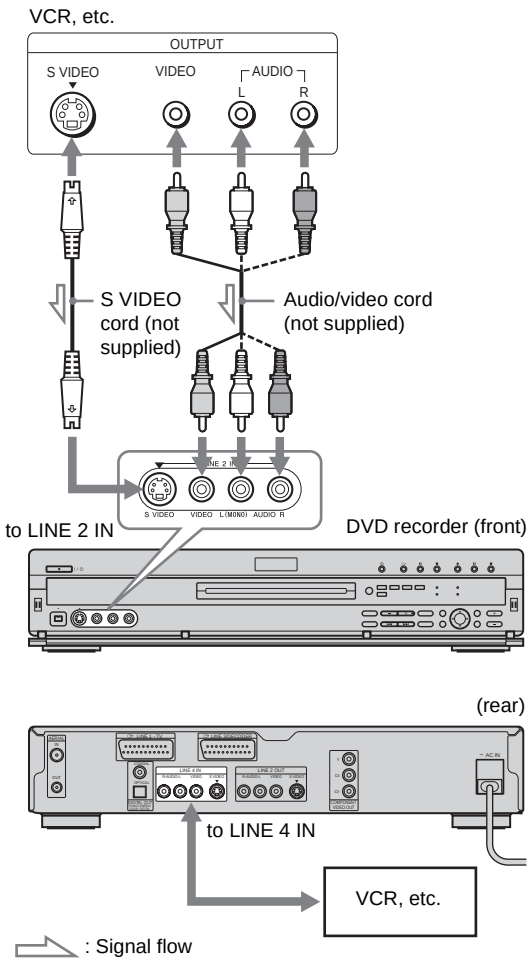
-RW VR -RW VIDEO +RW -R

You can connect other equipment (e.g. a VCR or video camera), and output the audio/video signals to the recorder for recording. Use the DV IN jack on the front panel if the equipment has a DV output jack (i.LINK jack) *(page 59)*.
See also the instruction manual supplied with the connected equipment.

◆If you cannot use the DV Edit functions
Follow the steps of "*Recording from connected equipment*" below, and do the following:
– Connect your digital video camera to the DV IN jack on the front panel.
– Select the input audio signal for the digital video camera in step 4.

Connecting other equipment to the LINE 2 IN or LINE 4 IN jacks

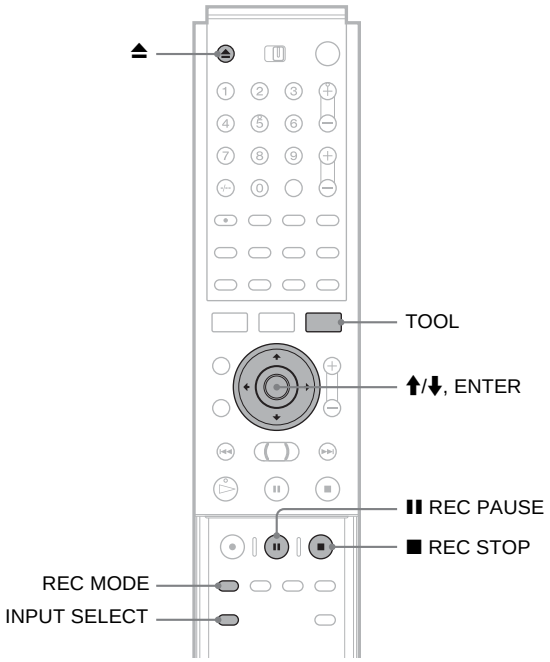
You can monitor the recorded picture with a TV connected to the recording equipment.



Hint
When the connected equipment outputs only monaural sound, use audio cables that distribute monaural sounds to left/right channels (not supplied).

Notes
- Do not connect the yellow LINE IN (VIDEO) jack when using an S VIDEO cord (not supplied).
- Do not connect the output jack of this recorder to another equipment's input jack with the other equipment's output jack connected to the input jack of this recorder. Noise (feedback) may result.
- Pictures containing copy protection signals that prohibit any copying cannot be recorded.

Recording from connected equipment



1 Turn on your TV and this recorder, then set it to the connected channel ("VIDEO," etc.).

2 Press ⏏, and place a recordable disc on the tray.

3 Press ⏏ to close the disc tray.
Wait until "LOAD" disappears from the front panel display.

4 Press INPUT SELECT to select a input source according to the connection.
The front panel display changes as follows:

Programme position → L1 → L2 → L3 → L4 → DV

5 Press REC MODE repeatedly to select the recording mode.
The recording mode changes as follows:

HQ → HSP → SP → LP → EP → SLP

→*continued*

6 Select the audio input using the Tool menu.

① **Press TOOL.**

② **Press ↑/↓ to select "Line Audio Input," then press ENTER.**

③ **Press ↑/↓ to select the item, then press ENTER.**
- Stereo (default)
- Bilingual*

* When recording a bilingual programme on a DVD-RW (Video mode), DVD+RW, or DVD-R, select the sound track, "Main" or "Sub", in "Bilingual Recording" of Options Setup (*page 82*).

7 Press ❚❚ REC PAUSE to set this recorder to record pause.

8 Insert the source tape into the connected equipment and set to playback pause.

9 At the same, press ❚❚ REC PAUSE on this recorder and the pause or play button on the connected equipment.
Recording starts.

10 To stop recording, press ■ REC STOP on this recorder.

Hint

You can adjust the settings for the recording picture before recording.
See "Adjusting the Recording Picture Quality and Size" (page 30).

Note

When recording a video game image, the screen may not be clear.

Settings and Adjustments

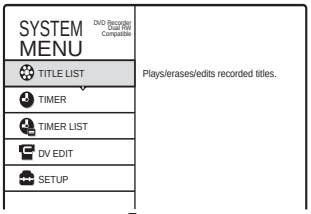
The Setup Displays allow you to adjust the recorder to suit your preferences.
This section first lists the types of Setup Displays, and then explains how to use the Setup Displays *(“Using the Setup Displays”)*.

- *About the Setup Display Structure page 73*
- *Using the Setup Displays page 74*
- *Settings (Basic Settings) page 75*
- *Video Settings page 76*
- *Audio Settings page 78*
- *Features Settings page 79*
- *Options Settings. page 82*
- *Easy Setup (Resetting the Recorder) page 83*

About the Setup Display Structure

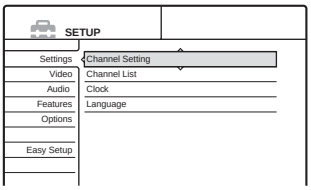
By using the Setup Displays, you can make various adjustments to items such as picture and sound, as well as select a language for the subtitles.

System Menu

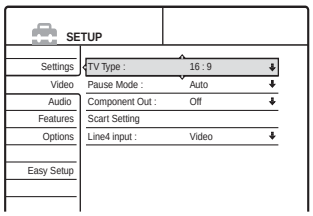


Select “SETUP”

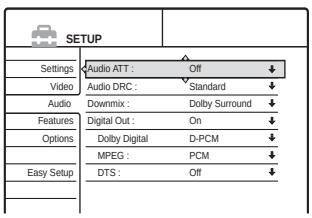
Setup Displays



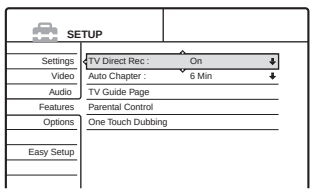
1. “Settings” *(page 75)*



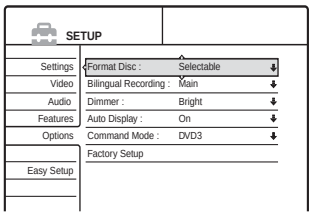
2. “Video” *(page 76)*



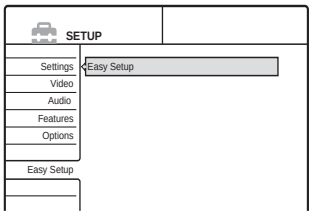
3. “Audio” *(page 78)*



4. “Features” *(page 79)*



5. “Options” *(page 82)*



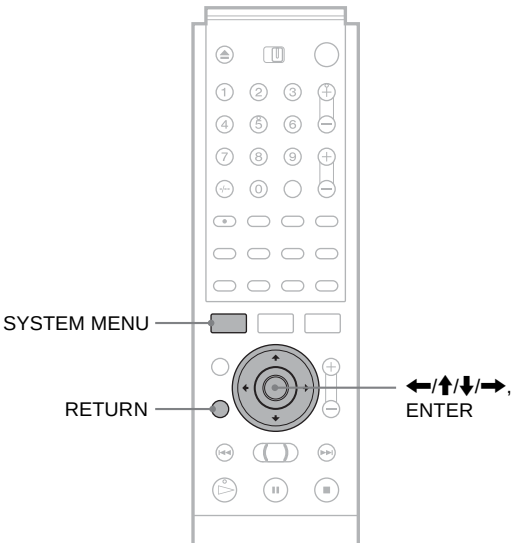
6. “Easy Setup” *(page 83)*

Using the Setup Displays

The Setup Displays are used in the following way.

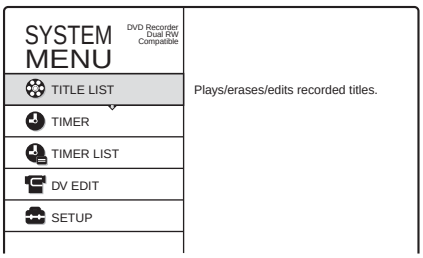
Note

Playback settings stored in the disc take priority over the Setup Display settings, and not all the functions described may work.



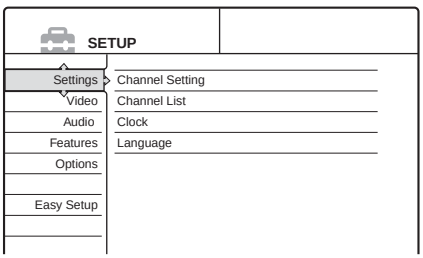
1 Press SYSTEM MENU while the recorder is stopped.

The System Menu appears.



2 Press ↑/↓ to select “SETUP,” then press ENTER.

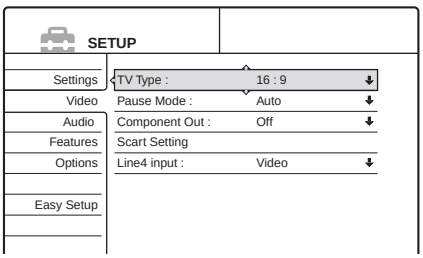
The Setup Display appears.



3 Press ↑/↓ to select “Settings,” “Video,” “Audio,” “Features,” “Options,” or “Easy Setup,” then press ENTER.

The selected Setup Display appears.

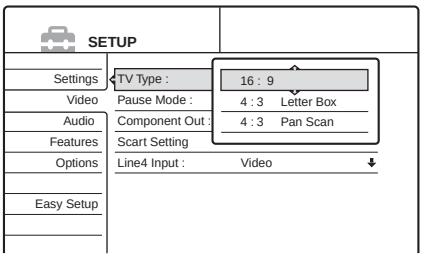
Example: “Video”



4 Press ↑/↓ to select the item you want to set up, then press ENTER.

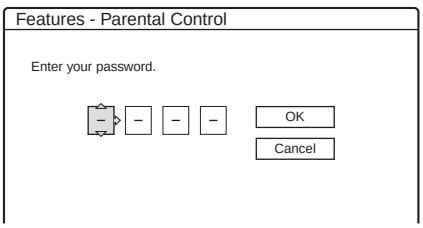
Available options for the item appear.

Example: “TV Type”



Some items display a dialogue box that provides further detailed settings.

Example: The following dialogue box appears when “Parental Control” in Features Setup is selected.

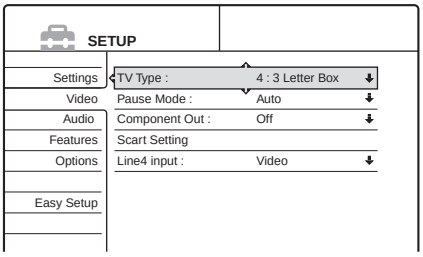


In this case, see “Parental Control” in “*Features Settings*” *(page 80)*.

5 Press ↑/↓ to select an option, then press ENTER.

The set option is displayed next to the setup item.

Example: when “4:3 Letter Box” is set.



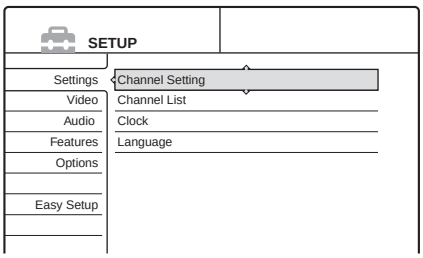
To turn off the display

Press SYSTEM MENU repeatedly.

Settings (Basic Settings)

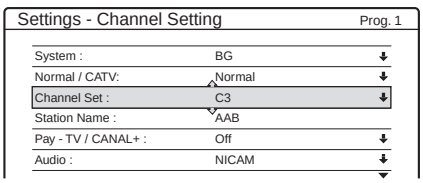
The Settings Setup helps you to make fundamental settings for the recorder. Since you will have already made the settings here when setting up the recorder, *see "Advanced Hookups and Settings" in the separate booklet, "Hookups and Settings"* to make changes to the items below.

Select "Settings" in the Setup Display. To use the display, *see "Using the Setup Displays" (page 74)*.
The default settings are underlined.



Channel Setting

Sets contents for each of the programme positions. Press PROG +/– to select a programme position you want to set up, then set the following items if necessary.



◆System
Selects the TV system.

BG	Select this when in West European countries, except those listed below.
DK	Select this when in East European countries.
I	Select this when in Great Britain/Ireland.
L	Select this when in France.

◆Normal/CATV

Normal	Normally, select this.
CATV	Select this if the programme position is for Cable TV.

◆Channel Set
Sets the channel number.

◆Station Name
Enters/Re-enters the station name.

◆PAY-TV/CANAL+

On	Select this if the programme position is for PAY TV or Canal Plus.
Off	Normally, select this.

◆Audio
Sets the sound for the programme position.

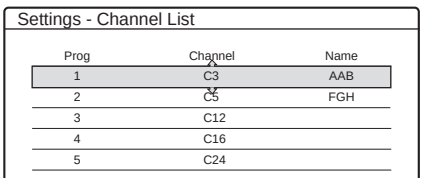
NICAM	Normally, select this.
Standard	Select this if the sound from NICAM broadcasts is not clear.

◆AFT
Turns on or off the Auto Fine Tuning function.

On	Normally, select this.
Off	Allows you to adjust the pictures manually. Select this if the Auto Fine Tuning function does not work effectively.

Channel List

Rearranges the programme order.



Clock

◆Auto Adjust

On	Turns on the Auto Clock Set function when a station in your local area broadcasts a time signal. Sets the programme number that broadcasts the time signal.
Off	Turns off the Auto Clock Set function. In this case, set the clock manually. *(See "Setting the clock manually" in the separate booklet, "Hookups and Settings.")*

◆Present Time
Displays the current time and date.
You can input the current time and date when "Auto Adjust" is set to "Off."

Language

◆OSD (On-Screen Display)
Switches the display language on the screen.

◆DVD Menu
Switches the language for the DVD menu.

◆Audio
Switches the language of the sound track.
When you select "Original," the language given priority in the disc is selected.

➡*continued*

◆Subtitle

Switches the language of the subtitles recorded on the disc. When you select “Audio Follow,” the subtitle language changes according to the language you selected for the sound track.

Hint

If you select “Others” in “DVD Menu,” “Subtitle,” or “Audio,” select and enter a language code from “*Language Code List*” *(page 92)* using the number buttons.

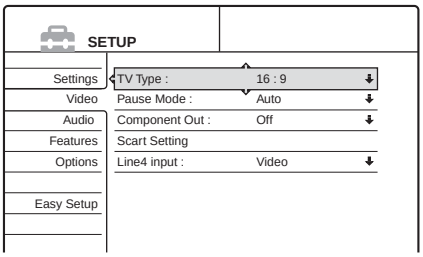
Note

If you select a language in “DVD Menu,” “Subtitle,” or “Audio” that is not recorded on the DVD VIDEO, one of the recorded languages will be automatically selected.

Video Settings

Choose the settings according to the TV, tuner, or decoder to be connected.

Select “Video” in the Setup Display. To use the display, *see “Using the Setup Displays” (page 74)*.
The default settings are underlined.

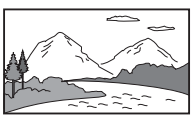


TV Type

Selects the aspect ratio of the connected TV (4:3 standard or wide).

16:9	Select this when connecting to a wide-screen TV or TV with a wide mode function.
4:3 Letter Box	Select this when connecting to a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 Pan Scan	Select this when connecting to a 4:3 screen TV. Automatically displays a wide picture on the entire screen and cuts off the portions that do not fit.

16:9



4:3 Letter Box



4:3 Pan Scan



Note

Depending on the disc, “4:3 Letter Box” may be selected automatically instead of “4:3 Pan Scan” or vice versa.

Pause Mode (DVDs only)

Selects the picture in pause mode.

Auto	The picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
Frame	The picture, including subjects that do not move dynamically, is output in high resolution.

Component Out

Selects if the video signals are output from the COMPONENT VIDEO OUT jacks.

On	Outputs the component video signals.
Off	Outputs no signals.

Notes

- When you set “Line 1 Output” to “RGB,” you cannot set “Component Out” to “On.”
- When you connect the recorder to a monitor or projector via only the COMPONENT VIDEO OUT jacks, do not select “Off.” If you select “Off” in this case, the picture may not appear.

Scart Setting

Sets the method of inputting/outputting signals from the SCART (EURO AV) jacks on the rear panel of the recorder. Select an option for each of the items below according to the combination of jacks and methods that you are going to use.

◆Line1 Output

Selects a method of inputting video signals for the LINE 1-TV jack.

Video	Outputs video signals.
S Video	Outputs S video signals.
RGB	Outputs RGB signals.

Notes

- If your TV does not accept S video or RGB signals, no picture appears on the TV screen even if you select “S Video” or “RGB.” See the instructions supplied with your TV.
- You cannot select ”RGB” when “Component Out” above is set to “On.”
- SMARTLINK is available only when “Video” is selected.

◆Line3 Input

Selects a method of inputting video signals for the LINE 3/ DECODER jack.

Video/RGB	Inputs video signals or RGB signals.
S Video	Inputs S video signals.
Decoder	Select this when connecting to a PAY-TV/Canal Plus decoder.

◆Line3 Output

Selects a method of outputting video signals for the LINE 3/ DECODER jack.

Video	Outputs video signals.
S Video	Outputs S video signals.

Line4 Input

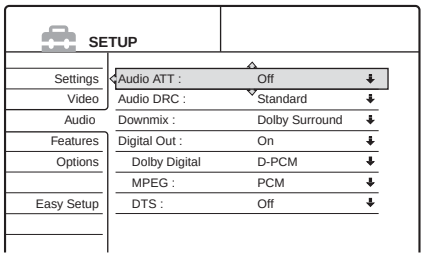
Selects the method of inputting video signals from the LINE 4 IN jack on the rear panel of the recorder.

Video	Inputs video signals.
S Video	Inputs S video signals.

Audio Settings

The Audio Setup allows you to set the sound according to the playback and connection conditions.

Select “Audio” in the Setup Display. To use the display, *see “Using the Setup Displays” (page 74)*.
The default settings are underlined.



Audio ATT (attenuation)

If the playback sound is distorted, set this item to “On.” The recorder reduces the audio output level.
This function affects the output of the following jacks:
– LINE 2 OUT AUDIO L/R jacks
– LINE 1-TV jack
– LINE 3/DECODER jack

On	Select this when the playback sound from the speakers is distorted.
Off	Normally select this position.

Audio DRC (Dynamic Range Control) (DVDs only)

Makes the sound clear when the volume is turned down when playing a DVD that conforms to “Audio DRC.” This affects the output from the following jacks:
– LINE 2 OUT AUDIO L/R jacks
– LINE 1-TV jack
– DIGITAL OUT (OPTICAL or COAXIAL) jack only when “Dolby Digital” is set to “D-PCM” *(page 78)*.
– LINE 3/DECODER jack

Standard	Normally select this position.
TV Mode	Makes low sounds clear even if you turn the volume down.
Wide Range	Gives you the feeling of being at a live performance.

Downmix (DVDs only)

Switches the method for mixing down to two channels when you play a DVD which has rear sound elements (channels) or is recorded in Dolby Digital format. For details on the rear signal components, *see “Checking the audio signal format” (page 45)*.
This function affects the output of the following jacks:
– LINE 2 OUT AUDIO L/R jacks
– LINE 1-TV jack
– DIGITAL OUT (OPTICAL or COAXIAL) jack when “DOLBY DIGITAL” is set to “D-PCM” *(page 78)*.
– LINE 3/DECODER jack

Dolby Surround	Normally select this position. Multi-channel audio signals are output to two channels for enjoying surround sounds.
Normal	Multi-channel audio signals are downmixed to two channels for use with your stereo.

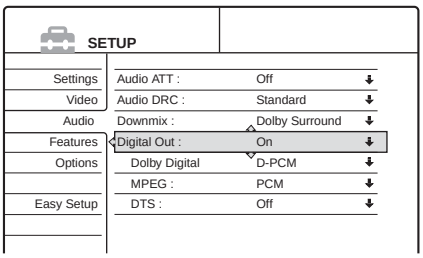
Digital Out

Selects if audio signals are output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

On	Normally select this position. When you select “On,” *see “Setting the digital output signal”* for further settings.
Off	The influence of the digital circuit upon the analogue circuit is minimal.

◆Setting the digital output signal

The following setup items switch the method of outputting audio signals when you connect a component such as an amplifier (receiver) or MD deck with a digital input jack.
For connection details, *see “Connecting the Audio Cords” in the separate booklet, “Hookups and Settings.”*
Select “Dolby Digital,” “MPEG,” and “DTS” after setting “Digital Out” to “On.”



If you connect a component that does not accept the selected audio signal, a loud noise (or no sound) will come out from the speakers, and may affect your ears or cause speaker damage.

Dolby Digital (DVDs only)

Selects the type of Dolby Digital signal.

D-PCM	Select this when the recorder is connected to an audio component lacking a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the “Downmix” item in Audio Setup *(page 78)*.
Dolby Digital	Select this when the recorder is connected to an audio component with a built-in Dolby Digital decoder.

MPEG (DVD VIDEO only)

Selects the type of MPEG audio signal.

PCM	Select this when the recorder is connected to an audio component without a built-in MPEG decoder. If you play MPEG audio sound tracks, the recorder outputs stereo signals via the DIGITAL OUT (OPTICAL or COAXIAL) jack.
MPEG	Select this when the recorder is connected to an audio component with a built-in MPEG decoder.

DTS (DVD VIDEO only)

Selects whether or not to output DTS signals.

On	Select this when the recorder is connected to an audio component with a built-in DTS decoder.
Off	Select this when the recorder is connected to an audio component without a built-in DTS decoder.

Note

When you use the DIGITAL OUT (OPTICAL or COAXIAL) jack to listen to MPEG audio signals and set "MPEG" to "MPEG" in Audio Setup, no sound will come from your speakers if you select one of the TVS modes.

Features Settings

The Features Setup provides entries to the following features.

TV Direct Rec (DVD-RW/DVD+RW/DVD-R only)

On	Allows you to easily record what you are watching on the TV using SMARTLINK.
Off	Turns off the TV Direct Rec function.

Auto Chapter (DVD-RW in Video mode/ DVD+RW/DVD-R only)

Automatically divides a recording (a title) into chapters by inserting chapter markings at a specified interval. The markings are made during recording.

Off	No chapter mark is inserted.
6Min	Inserts chapter marks at approximately 6 minute intervals.
15Min	Inserts chapter marks at approximately 15 minute intervals.

TV Guide Page

Some broadcast systems ensure a Teletext service* in which the complete programmes and their data (title, date, channel, recording start time, etc.) are stored day by day. A TV guide page corresponds to each day of the week. When recording a programme, the recorder automatically takes the programme name from the Teletext pages and stores it as the title name. The TV guide page numbers depend entirely on the broadcast itself and may be subject to change. If so, you may have to set those TV guide page numbers manually in the TV Guide Page menu.

* Not available in some areas.

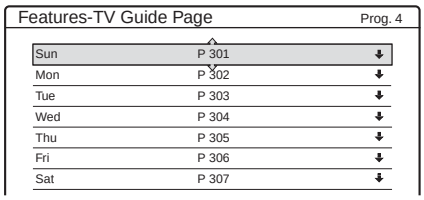
1 Follow steps 1 to 3 of *"Using the Setup Displays" (page 74)* to select "Features" in the Setup Display.

2 Press ↑/↓ to select "TV Guide Page" then press → or ENTER.

The dialogue box appears.

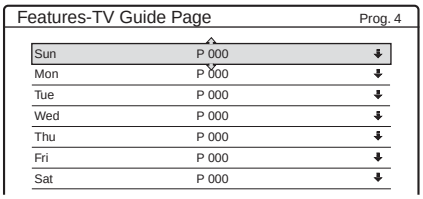
3 Select the programme position for which you want to set or change the TV guide page.

- The TV guide page numbers appear automatically when the recorder detects them example: (P301).

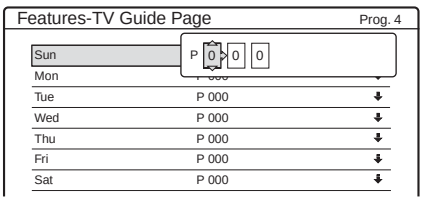


→*continued*

• If the recorder does not detect them (P000), you have to set the appropriate TV guide page number manually.



4 Press ↑/↓ to select the TV guide page number you want to modify, then press ENTER.



5 Press the number buttons to enter the TV guide page number, then press ENTER to confirm the setting.
If you make a mistake, press CLEAR to re-enter the correct number.

6 To set or change another TV guide page number, repeat steps 4 and 5 above.

7 Press SYSTEM MENU repeatedly to turn off the display.

Notes

- In step 6 above, enter "000" if you don't want to use the TV guide page number for automatic labelling. The recorder will instead store a default title name (programme position, start time - stop time)
- Refer to the Teletext information on your TV screen to get the TV guide page number with the programme titles and their start times.
- If the Teletext TV guide has a page which always shows the programmes for the current day, this page should be input for all days.
- If you start recording more than three minutes before the programme is scheduled to start, the correct label information may not be transferred. The recorder receives the label information three minutes after the recording starts.
- Note that this function may not work correctly with programmes broadcast from some stations.
- If the broadcast system updates the Teletext information at the moment recording starts, the title label may not correspond to the recorded programme. In this case, you may have to manually enter the correct title (*page 51).*

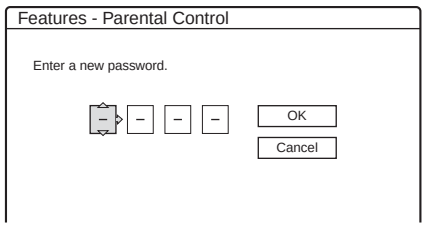
Parental Control (DVD VIDEO only)

Playback of some DVD VIDEOs can be limited according to a predetermined level, such as the age of the users. Scenes may be blocked or replaced with different scenes.

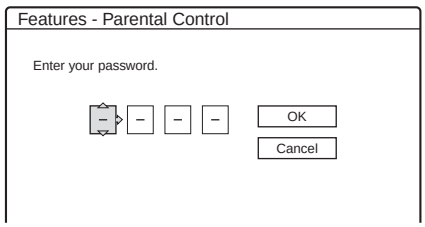
1 Follow steps 1 to 3 of "*Using the Setup Displays*" *(page 74)* to select "Features" in the Setup Display.

2 Press ↑/↓ to select "Parental Control," then press ENTER.

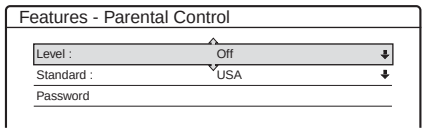
◆If you have not entered a password
The display for registering a new password appears.



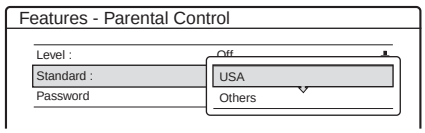
◆When you have already registered a password
The display for entering the password appears.



3 Enter your four digit password using the number buttons, then select "OK" and press ENTER.

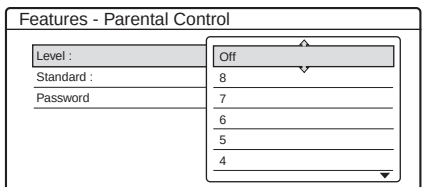


4 Press ↑/↓ to select "Standard," then press ➡ or ENTER.
The selection items for "Standard" are displayed.



5 Press ↑/↓ to select a geographic area as the playback limitation level, then press ENTER.
The area is selected.
When you select "Others," press the number buttons to select and enter an area code in the table on *page 81*. Then select "OK" and press ENTER.

6 Press ↑/↓ to select "Level," then press ENTER.
The selection items for "Level" are displayed.



7 Select the level you want using ↑/↓, then press ENTER.
Parental Control setting is complete.
The lower the value, the stricter the limitation.

◆To cancel the Parental Control setting for the disc
Set "Level" to "Off" in step 7.

◆To change the password

① **In step 4, select "Password," then press ENTER.**
The display for registering a password appears.

② **Enter a new four-digit password using the number buttons, then select "OK" and press ENTER.**

Notes

- If you forget your password, you will have to reset it by selecting "Parental Control" of "Factory Setup" in Options Setup (*page 82)*.
- When you play discs which do not have the Parental Control function, playback cannot be limited on this recorder.
- Depending on the disc, you may be asked to change the Parental Control level while playing the disc. In this case, enter your password, then change the level. If the Resume Play mode is cancelled, the level returns to the previous level.

◆Area code

Standard	Code number
Argentina	2044
Australia	2047
Austria	2046
Belgium	2057
Brazil	2070
Canada	2079
Chile	2090
China	2092
Denmark	2115
Finland	2165
France	2174
Germany	2109
India	2248
Indonesia	2238
Italy	2254
Japan	2276
Korea	2304
Malaysia	2363
Mexico	2362
Netherlands	2376
New Zealand	2390
Norway	2379
Pakistan	2427
Philippines	2424
Portugal	2436
Russia	2489
Singapore	2501
Spain	2149
Sweden	2499
Switzerland	2086
Thailand	2528
United Kingdom	2184

One Touch Dubbing

Displays the following items.

◆Finalize Disc

Selects whether or not to finalize the disc automatically following One Touch Dub (*page 62)*.

Auto	Automatically finalizes the disc following One Touch Dub.
Manual	Allows you to finalize the disc manually.

◆Add to Edit List

Automatically generates a program in the DV Edit List during One Touch Dub of DV/Digital8 format tapes. You can use the created program for further editing. For details, *see page 61*.

On	Automatically generates a program during One Touch Dub of DV/Digital8 format tapes.
Off	No program is generated.

Options Settings

The Options Setup allows you to set up other operational settings.

Select "Options" in the Setup Display. To use the display, *see "Using the Setup Displays" (page 74).*
The default settings are underlined.

Format Disc (DVD-RW only)

Selects the recording format when formatting a DVD-RW.

VR	Automatically formats the disc in VR mode.
Video	Automatically formats the disc in Video mode.
Selectable	Allows you to select the format before formatting.

Bilingual Recording (for all recordable discs except DVD-RW in VR mode)

Selects the sound to be recorded on the disc. This setting is not necessary when recording on DVD-RWs (VR mode) that record both the main and sub sounds.

Main	Records the main sound for the bilingual programme.
Sub	Records the sub sound for the bilingual programme.

Dimmer

Adjusts the lighting of the front panel display.

Bright	Bright lighting.
Dark	Low lighting.
Off	Turns off the lighting.

Auto Display

On	Automatically displays information on the screen when the recorder is turned on, etc.
Off	Displays information only when DISPLAY is pressed.

Command Mode

Changes the Command Mode of the recorder if other DVD equipment is assigned the same Command Mode. Be sure to match the Command Mode switch on the remote to the setting made here. For details, *see "Preparing the Remote" in the separate booklet, "Hookups and Setting."*

DVD1	Select this when the default Command Mode conflicts with other DVD equipment.
DVD2	Select this when the default Command Mode conflicts with other DVD equipment.
DVD3	The default Command Mode of the recorder.

Factory Setup

Allows you to select the setup settings by group, and return them to the default settings. Note that all of your previous settings will be lost.

1 **Follow steps 1 to 3 of "*Using the Setup Displays*" *(page 74)* to select "Options" in the Setup Display.**

2 **Press ↑/↓ to select "Factory Setup," then press → or ENTER.**
The display for selecting the group of settings appears.

3 **Press ↑/↓ to select the group of settings you want to return to default from "Settings," "Video," "Audio," "Features," "Options" "Parental Control," and "All," then press → or ENTER.**
The dialogue box appears.

4 **Press ←/→ to select "Start," then press ENTER.**
The selected settings return to the default settings.

5 **Press ENTER when "Finish" appears.**

Easy Setup (Resetting the Recorder)

Select this to restart Easy Setup mode for basic setup.

Select “Easy Setup” in the Setup Display. To use the display, *see “Using the Setup Displays” (page 74)*.

Easy Setup

1 **Follow steps 1 to 3 of “*Using the Setup Displays*” *(page 74)* to select “Easy Setup” in the Setup Display.**

2 **Follow the Easy Setup explanation in the separate booklet, *“Hookups and Settings.”***

Additional Information

- *Troubleshooting* *page 84*
- *Self-diagnosis Function (When letters/numbers appear in the display)* *page 88*
- *Specifications* *page 89*
- *About i.LINK* *page 90*
- *Glossary* *page 91*
- *Language Code List* *page 92*

Troubleshooting

If you experience any of the following difficulties while using the recorder, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power does not turn on.

➡ Check that the mains lead is connected securely.

Picture

There is no picture.

➡ Re-connect the connecting cord securely.
➡ The connecting cords are damaged.
➡ The Setup Display appears. Press RETURN to turn off the display.
➡ Check the connection to your TV. *(See the separate booklet, "Hookups and Settings.")*
➡ Check that "Scart Setting" in Video Setup is set to the appropriate item that conforms to your system (*page 77)*.
➡ Switch the input selector on your TV (such as to "VCR") so that the signal from the recorder appears on the TV screen.
➡ If you connect the recorder to your TV via only the COMPONENT VIDEO OUT jacks, set "Component Out" in Video Setup to "On" (*page 77)*.

Picture noise appears.

➡ The disc is dirty or flawed.
➡ If the picture output signal from your recorder passes through your VCR to get to your TV, or if you are connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programmes could affect picture quality. If you still experience this problem even when you connect your recorder directly to your TV, please try connecting your recorder to your TV's S VIDEO input.
➡ You are playing a disc recorded in a colour system that is different from your TV.

TV programme reception does not fill the screen.

➡ Set the channel manually in "Channel Setting" in Settings Setup. *(See the separate booklet, "Hookups and Settings.")*
➡ Select the correct source using the INPUT SELECT button, or select a programme position of any TV programme using the PROG +/– buttons.

TV programme pictures are distorted.

➡ Reorient the TV aerial.
➡ Adjust the picture. *(See the separate booklet, "Hookups and Settings.")*
➡ Place the recorder and TV farther apart.
➡ Place the TV and any bunched aerial cables farther apart.

TV channels cannot be changed.

➡ Switch the input selector to TV.
➡ Connect the aerial cable correctly. *(See the separate booklet, "Hookups and Settings.")*

The picture from equipment connected to the recorder's input jack does not fill the screen.

➡ If the equipment is connected to the LINE 1-TV jack, select "L1" in the front panel display by pressing PROG +/– or INPUT SELECT.
If the equipment is connected to the LINE 2 IN jacks, select "L2" in the front panel display by pressing PROG +/– or INPUT SELECT.
If the equipment is connected to the LINE 3/DECODER jack, select "L3" in the front panel display by pressing PROG +/– or INPUT SELECT.
If the equipment is connected to the LINE 4 IN jacks, select "L4" in the front panel display by pressing PROG +/– or INPUT SELECT.
If the equipment is connected to the DV IN jack, (this is usually for a digital video camera connection), select "DV" in the front panel display by pressing PROG +/– or INPUT SELECT.

The playback picture or TV programme from the equipment connected through the recorder is distorted.

➡ If the playback picture output from a DVD player, VCR, or tuner goes through your recorder to get to your TV, the copy-protection signal applied to some programmes could affect picture quality. Disconnect the playback equipment in question and connect it directly to your TV.

The picture does not fill the screen, even though the aspect ratio is set in "TV Type" in Video Setup.

➡ The aspect ratio of the disc is fixed on your DVD.

The picture is black and white.

➡ Check that "Line1 Output" of "Scart Setting" in Video Setup is set to the appropriate item that conforms to your system (*page 77*).
➡ If you are using a SCART (EURO AV) cord, be sure to use one that is fully wired (21 pins).

Sound

There is no sound.

➡ The disc is dirty or flawed.
➡ Re-connect all connections securely.
➡ The connecting cord is damaged.
➡ Check the connections to the amplifier input.
➡ The input source setting on the amplifier is incorrect
➡ The recorder is in pause mode or in Slow-motion Play mode.
➡ The recorder is in fast forward or fast reverse mode.
➡ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jacks, check the Audio Setup settings *(page 78)*.

Sound distortion occurs.

➡ Set "Audio ATT" in Audio Setup to "On" (*page 78*).

Sound is noisy.

➡ The disc is dirty or flawed.
➡ When playing a CD with DTS sound tracks, noise will come from the LINE 2 OUT AUDIO L/R jacks, LINE 1-TV jack, or LINE 3/DECODER jack. *(See the separate booklet, "Hookups and Settings.")*

The sound volume is low

➡ The sound volume is low on some DVDs.
The sound volume may improve if you set "Audio DRC" in Audio Setup to "TV Mode" (*page 78*).
➡ Set "Audio ATT" in Audio Setup to "Off" (*page 78*).

The language for the sound track cannot be changed.

➡ Multilingual tracks (main and sub) cannot be recorded on DVD-RWs (Video mode), DVD+RWs, or DVD-Rs. To record the language, select "Main" or "Sub" of "Bilingual Recording" in Options Setup before recording (*page 82*). To record both the main and sub sounds, record on a DVD-RW (VR mode).

Playback

The disc does not play.

➡ No disc is inserted.
➡ A blank disc is inserted.
➡ The disc is upside down.
Insert the disc with the labelled side facing up.
➡ The disc is not correctly inserted.
➡ The recorder cannot play certain discs (such as a CD-ROM) *(page 37)*.
➡ The region code on the DVD VIDEO does not match the recorder *(page 36)*.
➡ Moisture has condensed inside the recorder. Remove the disc and leave the recorder turned on for about half an hour until the moisture evaporates *(page 2)*.
➡ If the disc was recorded on another recorder, the recorder cannot play the disc if it was not finalized *(page 34)*.

The disc does not start playback from the beginning.

➡ Resume play was activated *(page 40)*. During stop, select "Reset Resume" in the Tool menu, then press ENTER.
➡ You have inserted a disc whose Title menu or DVD menu automatically appears on the TV screen when it is first inserted.

The recorder starts playing the disc automatically.

➡ The DVD VIDEO features an auto playback function.

Playback stops automatically.

➡ While playing discs with an auto pause signal, the recorder stops playback at the auto pause signal.

➡*continued*

Some functions such as Stop, Search, or Slow-motion Play cannot be performed.

➡ Depending on the disc, you may not be able to do some of the operations above. See the instruction manual supplied with the disc.

The language for the sound track cannot be changed.

➡ Multilingual tracks are not recorded on the DVD VIDEO, DVD-R, DVD+R, DVD+RW, or DVD-RW being played.
➡ The DVD VIDEO prohibits the changing of the language for the sound track.
➡ Try changing the language using the DVD VIDEO's menu.

The subtitle language cannot be changed or turned off.

➡ Multilingual subtitles are not recorded on the DVD VIDEO.
➡ The DVD VIDEO prohibits changing of the subtitles.
➡ Try changing the subtitle using the DVD VIDEO's menu.

The angles cannot be changed.

➡ Multi-angles are not recorded on the DVD VIDEO being played.
➡ You are trying to change the angles when "ANGLE" does not appear on the TV screen *(page 46)*.
➡ The DVD VIDEO prohibits changing angles.
➡ Try changing the angle using the DVD VIDEO's menu.

Recording/Timer recording/Editing

The programme position cannot be changed from the channel you are recording.

➡ Set the TV's input source to "TV."

Recording does not start immediately after you press the ● REC button.

➡ An unused DVD-RW was inserted. It takes a while for the recorder to automatically format a DVD-RW (VR mode).

Nothing was recorded even though you set the timer setting correctly.

➡ There was a power failure during recording.
➡ The recorder's internal clock stopped due to a power failure that lasted for more than 1 hour. (*See "Setting the Clock" in the separate booklet, "Hookups and Settings.")*
➡ The channel was disabled after the timer recording is set. (*See "Changing or disabling programme positions" in the separate booklet, "Hookups and Settings.")*
➡ Disconnect the mains from the wall outlet, and connect it again.
➡ "PDC/VPS Scan Off" was selected in the Tool menu (*page 26)*.
➡ The programme contains copy protection signals that restricts copying.

Recording does not stop immediately after you press the ■ REC STOP button

➡ It will take a few seconds for the recorder to input disc data before recording can stop.

Recording does not stop after you press ■.

➡ Press ■ REC STOP.

Timer recording is not complete or did not start from the beginning.

➡ There was a power failure during recording. If the power recovers during the time a timer recording is set, the recorder resumes recording.
Should the power failure continue for more than 1 hour, reset the clock. *(See "Setting the Clock" in the separate booklet, "Hookups and Settings.")*
➡ Other timer setting overlapped the timer setting (*page 27)*.
➡ Disc space was not enough.
➡ The PDC/VPS function is working.

Contents previously recorded were erased.

➡ Data that has been recorded on a DVD with a PC will be erased from the disc when the disc is inserted.

The PDC/VPS function does not operate.

➡ Check that the clock and date are set correctly.
➡ Check that the VPS/PDC time you set is the correct one (there might be a mistake in the TV programme guide). If the broadcast you wanted to record did not send the good VPS/PDC information, the recorder will not start recording.
➡ If the reception is poor, the VPS/PDC signal might be altered and the recorder might not start recording.
➡ The "PDC/VPS Scan" function is set to "Off" (*page 26)*.

Recording from the equipment with a timer

Nothing was recorded even though you set the Synchro-Rec setting correctly.

➡ You forgot to turn off the connected equipment. Turn off the connected equipment and set the recorder to Synchro-Rec standby mode.
➡ The recorder is connected to the TV output jack of the connected equipment.

Synchro-Recording does not complete.

➡ The timer setting for the connected equipment overlapped the recorder's timer setting *(page 32)*.
➡ There was a power failure during the recording.

The recorder automatically starts recording when the tuner is turned on.

➡ The Synchro-Rec function was activated. Turn off the tuner and cancel the Synchro-Rec function. *(See "Recording from External Equipment with a Timer (Synchro Rec)" on page 31.)*

Display

The clock has stopped.

➡ Set the clock again. *(See "Setting the Clock" in the separate booklet "Hookups and Settings.").*

➡ The clock stopped due to a power failure that lasted for more than 1 hour. Reset the clock. *(See "Setting the Clock" in the separate booklet "Hookups and Settings.").*

The TIMER REC indicator is flashing.

➡ The disc does not have enough space or there are more than 99 titles in the disc. Insert a recordable disc, and turn off the recorder.

➡ There is no recordable disc inside the recorder.

The recording mode indication is incorrect.

➡ If you make a recording that is less than three minutes long, the recording mode indication shown during playback may not match the recording mode you selected during recording. Note that the actual recording mode will always match the mode you selected, not the indication during playback.

Remote commander

The remote does not function.

➡ Batteries are weak. *(See the separate booklet, "Hookups and Settings.")*

➡ There are obstacles between the remote and the recorder.

➡ The remote is too far from the recorder.

➡ There are no batteries in the remote. *(See the separate booklet, "Hookups and Settings.")*

➡ The remote's manufacturer code returned to the default setting when you replaced the batteries. Reset the code. *(See "Controlling your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings)."*

➡ Turn on the recorder.

➡ The remote is not pointed at the remote sensor on the recorder.

➡ Different command modes are set for the recorder and remote. Set the same command mode. *(See "Preparing the Remote" in the separate booklet, "Hookups and Settings.")*

➡ The TV/DVD switch is set to TV. *(See "Controlling Your TV or AV Amplifier (Receiver)" in the separate booklet, "Hookups and Settings.")*

Other Sony equipment responds to the remote.

➡ The same command mode is set for both the equipment and recorder. Set a different command mode for the recorder. *(See the separate booklet, "Hookups and Settings.")*

Others

The recorder does not operate properly.

➡ When static electricity, etc., causes the recorder to operate abnormally, unplug the recorder and then plug it in again.

Nothing appears in the front panel display.

➡ "Dimmer" in Options Setup is set to "Off" (*page 82*).

Five numbers or letters are displayed on the front panel display.

➡ The self-diagnosis function was activated *(see the table on page 88*).

The disc tray does not open when you press the ⏏ (open/close) button.

➡ It may take a few seconds for the disc tray to open after you have recorded or edited a disc. This is because the recorder is adding disc data to the disc.

"RECOVERY" appears in the front panel display.

➡ The recorder's recovery function was activated when the recorder was turned on because the power was turned off or failed during recording. Leave the recorder on until "RECOVERY" disappears from the front panel display.

Self-diagnosis Function (When letters/numbers appear in the display)

When the self-diagnosis function is activated to prevent the recorder from malfunctioning, a five-character service number (e.g., C 13 50) with a combination of a letter and four numbers appears on the front panel display. In this case, check the following table.

First three characters of the service number	Cause and/or corrective action
C 13	The disc is dirty. ➡ Clean the disc with a soft cloth (*page 3*).
C 31	The disc is not inserted correctly. ➡ Re-insert the disc correctly.
E XX (xx is a number)	To prevent a malfunction, the recorder has performed the self-diagnosis function. ➡ Contact your nearest Sony dealer or local authorized Sony service facility and give the five-character service number. Example: E 61 10

Specifications

System

Laser
Semiconductor laser
Channel coverage
PAL/SECAM (B/G, D/K, I, L)
VHF: E2 to E12, R1 to R12, F1 to F10, Italian A to H, Ireland A to J, South Africa 4 to 13
UHF: E21 to E69, R21 to R69, B21 to B69, F21 to F69
CATV: S01 to S05, S1 to S20, France B to Q
HYPER: S21 to S41

The above channel coverage merely ensures the channel reception within these ranges. It does not guarantee the ability to receive signals in all circumstances.

Video reception: Frequency synthesizer system
Audio reception: Split carrier system

Aerial out
75-ohm asymmetrical aerial socket
Timer
Clock: Quartz locked
Timer indication: 24-hour cycle (digital)
Power back-up duration: 1 hour
Video recording format
MPEG Video
Audio recording format/applicable bit rate
Dolby Digital/2 ch, 256 kbps

Audio characteristics (Playback)

Frequency response
DVD (PCM 96 kHz): 4 Hz to 44 kHz (±1.0 dB)/DVD (PCM 48 kHz): 4 Hz to 22 kHz (±0.5 dB)/CD: 4 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio (S/N ratio)
DVD: 115 dB (LINE 2 OUT (AUDIO L/R) jacks only)
Harmonic distortion
DVD: 0.002 %
Dynamic range
DVD: 110 dB/CD: 100 dB
Wow and flutter
DVD: Less than detected value (0.001% W PEAK)

Audio characteristics (Recording/Playback)

Frequency response
DVD (Dolby Digital 48 kHz): 10 Hz-20 kHz (±1.0 dB)
Signal-to-noise ratio
DVD: 96 dB
Harmonic distortion
DVD: 0.004 %
Dynamic range
DVD: 96 dB

The signals from LINE 2 OUT (AUDIO L/R) jack are measured. When you play PCM sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL or COAXIAL) jack are converted to 48 kHz sampling frequency.

Inputs and outputs

LINE 2 OUT
(AUDIO)
Phono jack
Output level: 2 Vrms
Load impedance: 10 kilohms
(VIDEO)
Phono jack
Output level: 1.0 Vp-p
(S VIDEO)
4-pin mini DIN
Output level: Y:1.0 Vp-p, C: 0.3 Vp-p (PAL)
LINE 4 IN
(AUDIO)
Phono jack
Input level: 2 Vrms
Input impedance: more than 22 kilohms
(VIDEO)
Phono jack
Input level: 1.0 Vp-p
(S VIDEO)
4-pin mini DIN
Input level: Y:1.0 Vp-p, C: 0.3 Vp-p (PAL)
LINE 2 IN
(AUDIO)
Phono jack
Input level: 2 Vrms
Input impedance: more than 22 kilohms
(VIDEO)
Phono jack
Input level: 1.0 Vp-p
(S VIDEO)
4-pin mini DIN
Input level: Y:1.0 Vp-p, C: 0.3 Vp-p (PAL)
LINE 1 -TV
21-pin
CVBS IN/OUT
S-Video/RGB OUT (upstream)
LINE 3/DECODER
21-pin
CVBS IN/OUT
S-Video/RGB IN
S-Video OUT (downstream)
Decoder
DV IN
4-pin
i.LINK S100
DIGITAL OUT (OPTICAL)
Optical output jack
Output level: –18 dBm (wave length: 660 nm)
DIGITAL OUT (COAXIAL)
Phono jack
Output level: 0.5 Vp-p
Load impedance: 75 ohms
COMPONENT VIDEO OUT(Y, C_B, C_R)
Phono jack
Output level: Y: 1.0 Vp-p/C_B, C_R: 0.7 Vp-p

General

Power requirements
220-240 V AC, 50/60 Hz
Power consumption
47 W
Dimensions (approx.)
430 × 89 × 381 mm (width/height/depth) incl. projecting parts
Mass (approx.)
5.7 kg
Operating temperature
5 ºC to 35 ºC
Operating humidity
25 % to 80 %
Supplied accessories
Audio/video cord (1)
Mains lead (1)
Aerial cable (1)
Remote commander (remote) (1)
R6 (size AA) batteries (2)

Compatible colour systems

This recorder is designed to record using the PAL colour system and play back using the PAL or NTSC colour systems. The signals of the SECAM colour system can be received or recorded but played back in the PAL colour system only. Recording of video sources based on other colour systems cannot be guaranteed.

Specifications and design are subject to change without notice.

About i.LINK

The DV IN jack on this recorder is an i.LINK-compliant DV IN jack. This section describes the i.LINK standard and its features.

What is i.LINK?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment. i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment. When two or more i.LINK-compatible equipment are connected to this recorder in a daisy chain, operations and data transactions are possible with not only the equipment that this recorder is connected to but also with other devices via the directly connected equipment.
Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this recorder by the i.LINK cable (DV connecting cable). When connecting this recorder to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), see the instruction manual of the equipment to be connected.

About the Name “i.LINK”

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations.
IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronics Engineers.

i.LINK Baud rate

i.LINK’s maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

S100 (approx. 100 Mbps*)
S200 (approx. 200 Mbps)
S400 (approx. 400 Mbps)

The baud rate is listed under “Specifications” in the instruction manual of each equipment. It is also indicated near the i.LINK jack on some equipment.
The maximum baud rate of equipment on which it is not indicated such as this unit is “S100”.
When units are connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

* What is Mbps?
Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

i.LINK functions on this recorder

For details on how to dub when this recorder is connected to other video equipment having DV jacks, *see page 59.*
The DV jack on this recorder can only input DVC-SD signals. It cannot output signals. The DV jack will not accept MICRO MV signals from equipment such as a MICRO MV digital video camera with an i.LINK jack.
For further precautions, see the notes on *page 59.*
For details on precautions when connecting this recorder, also see the instruction manuals for the equipment to be connected.

Required i.LINK Cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

i.LINK and i, are trademarks.

Glossary

Chapter *(page 42)*
Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

CPRM (*page 20)*
CPRM (Content Protection for Recordable Media) is a coding technology that protects copyrights for images.

Dolby Digital *(page 78)*
Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data is recorded discretely and little deterioration occurs because all channel data processing is digital.

Dolby Surround (Pro Logic) *(page 78)*
Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, centre and rear signals. The rear channel is monaural.

DTS *(page 79)*
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio.
Good channel separation is realized because all of the channel data is recorded discretely and little deterioration occurs because all channel data processing is digital.

DVD VIDEO *(page 36)*
A disc that contains up to eight hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17GB.
The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence.
Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

DVD-R (*page 20)*
A DVD-R is a recordable disc that is the same size as a DVD VIDEO. Contents can be recorded only once to a DVD-R, and will have the same format as a DVD VIDEO.

DVD-RW *(page 20)*
A DVD-RW is a recordable and rewritable disc that is the same size as a DVD VIDEO. The DVD-RW has two different modes: VR mode and Video mode. DVDs created in Video mode have the same format as a DVD VIDEO, while discs created in VR (Video Recording) mode allow the contents to be programmed or edited.

DVD+RW *(page 20)*
A DVD+RW (plus RW) is a recordable and rewritable disc. DVD+RWs use a recording format that is comparable to the DVD VIDEO format.

Index *(page 44)*
A number that divides a track into sections to easily locate the point you want on a CD. Depending on the disc, no index may be recorded.

MPEG Audio *(page 79)*
International standard coding system used to compress audio digital signals authorized by ISO/IEC. MPEG 2, used on DVDs, conforms to up to 7.1-channel surround.

Title *(page 42)*
The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

Track *(page 42)*
Sections of a music feature on a CD (the length of a song).

Language Code List

For details, *see pages 44, 47, 75*.
The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code	Language
1027	Afar
1028	Abkhazian
1032	Afrikaans
1039	Amharic
1044	Arabic
1045	Assamese
1051	Aymara
1052	Azerbaijani
1053	Bashkir
1057	Byelorussian
1059	Bulgarian
1060	Bihari
1061	Bislama
1066	Bengali; Bangla
1067	Tibetan
1070	Breton
1079	Catalan
1093	Corsican
1097	Czech
1103	Welsh
1105	Danish
1109	German
1130	Bhutani
1142	Greek
1144	English
1145	Esperanto
1149	Spanish
1150	Estonian
1151	Basque
1157	Persian
1165	Finnish
1166	Fiji
1171	Faroese
1174	French
1181	Frisian
1183	Irish
1186	Scots Gaelic
1194	Galician
1196	Guarani
1203	Gujarati
1209	Hausa
1217	Hindi
1226	Croatian
1229	Hungarian
1233	Armenian
1235	Interlingua
1239	Interlingue
1245	Inupiak
1248	Indonesian
1253	Icelandic
1254	Italian
1257	Hebrew
1261	Japanese
1269	Yiddish
1283	Javanese
1287	Georgian
1297	Kazakh
1298	Greenlandic
1299	Cambodian
1300	Kannada
1301	Korean
1305	Kashmiri
1307	Kurdish
1311	Kirghiz
1313	Latin
1326	Lingala
1327	Laothian
1332	Lithuanian
1334	Latvian; Lettish
1345	Malagasy
1347	Maori
1349	Macedonian
1350	Malayalam
1352	Mongolian
1353	Moldavian
1356	Marathi
1357	Malay
1358	Maltese
1363	Burmese
1365	Nauru
1369	Nepali
1376	Dutch
1379	Norwegian
1393	Occitan
1403	(Afan)Oromo
1408	Oriya
1417	Punjabi
1428	Polish
1435	Pashto; Pushto
1436	Portuguese
1463	Quechua
1481	Rhaeto-Romance
1482	Kirundi
1483	Romanian
1489	Russian
1491	Kinyarwanda
1495	Sanskrit
1498	Sindhi
1501	Sangho
1502	Serbo-Croatian
1503	Singhalese
1505	Slovak
1506	Slovenian
1507	Samoan
1508	Shona
1509	Somali
1511	Albanian
1512	Serbian
1513	Siswati
1514	Sesotho
1515	Sundanese
1516	Swedish
1517	Swahili
1521	Tamil
1525	Telugu
1527	Tajik
1528	Thai
1529	Tigrinya
1531	Turkmen
1532	Tagalog
1534	Setswana
1535	Tonga
1538	Turkish
1539	Tsonga
1540	Tatar
1543	Twi
1557	Ukrainian
1564	Urdu
1572	Uzbek
1581	Vietnamese
1587	Volapük
1613	Wolof
1632	Xhosa
1665	Yoruba
1684	Chinese
1697	Zulu
1703	Not specified

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Words in quotations appear in the on-screen displays.

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Quick Guide to DVD Disc Types

☆☆☆ : Most suitable.
☆☆ : Can be used.
☆ : Some functions are limited.
— : Cannot be used.

Refer to the following when selecting a disc (DVD-R, DVD+RW, or DVD-RW) and a recording format (VR mode or Video mode for DVD-RW discs). Each disc can record for up to six hours.

You want to...	-RW VR	-RW VIDEO	+RW	-R
Record TV programmes	☆☆☆	☆☆☆	☆☆☆	☆☆
Reuse by deleting unwanted contents	☆☆☆	☆☆	☆☆	—
Edit recorded contents	☆☆☆	☆	☆	☆
Edit/Record from connected equipment	☆☆☆	☆☆☆	☆☆☆	☆☆☆
Copy discs for distribution	☆☆	☆☆☆	☆☆☆	☆☆☆
Play on other DVD equipment	☆☆*1	☆☆☆	☆☆☆	☆☆☆

Features	-RW VR	-RW VIDEO	+RW	-R
Recording				
Rewritable?	Yes	Yes	Yes	No
Can create chapters at fixed intervals (auto.)	Yes	Yes	Yes	Yes
Can record both sounds (main/sub) of a bilingual programme	Yes	No	No	No
Can record 16:9 size pictures	Yes	Yes *2	No	Yes *2
Can record Copy-Once programmes	Yes	No	No	No
Editing				
Can perform basic edit functions	Yes	Yes	Yes	Yes *3
Can create chapters wherever you like (manual)	Yes	No	No	No
Can perform advanced edit functions (Playlist edit)	Yes	No	No	No
DV editing				
One Touch Dub	Yes	Yes	Yes	Yes
Program Edit	Yes	Yes	Yes	Yes
Advanced Program Edit	Yes	Yes *4	Yes *4	Yes *4
Auto Scene Chaptering	Yes	No	No	No
Compatibility with other DVD equipment				
Finalization required?	No *5	Yes	No *5	Yes
Can generate a Title Menu (DVD Menu)	No	Yes	Yes	Yes

*1 DVD-RWs (VR mode) can only be played on DVD equipment that is VR compatible.
*2 Only if the recording mode is SP, HSP, or HQ, and "Rec Screen Size" is set to 16:9.
*3 Erasing titles does not free up disc space.
*4 You will need another blank DVD-RW.
*5 For certain DVD equipment, finalization may be required.

Note

For details of the above functions and implied restrictions, see the explanations inside the manual.

Printed on 100% recycled paper using VOC (Volatile Organic Compound)-free vegetable oil based ink.

Sony Corporation Printed in Japan

http://www.sony.net/